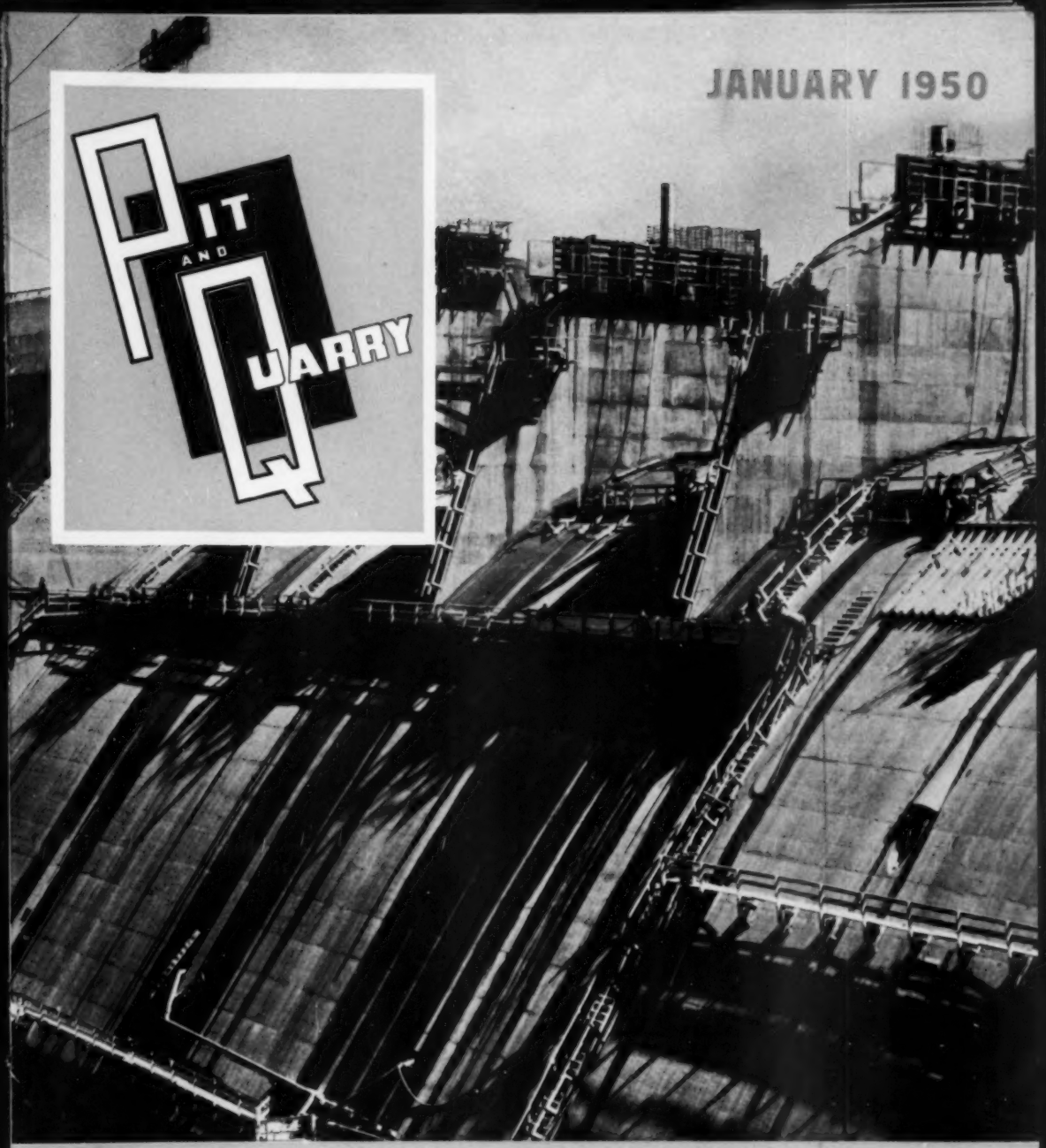
PIT AND QUARRY

JANUARY 1950



Construction View of Angostura Dam on the Cheyenne River near Hot Springs, S. D., (See page 62).

In this Issue

Reviews and Forecasts of the Nonmetallic Minerals Industries
The Construction Picture • New Plant of Kingston Trap Rock Co.
Programs of Agstone, Sand-Gravel, Crushed Stone Conventions

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SPECIAL trade-in offer

to owners of 15 year and older Mack trucks

The time has come when it will pay you to pension-off your "Old Faithful" and modernize your hauling with a new Mack truck. *Sure there's years more work left in your Mack.* That's proved by the thousands of Macks on the road well over 15 years old. As an old friend, we want you to get the benefits of a modern Mack. We want you to get the advantage of Mack's special trade-in allowance offer.

Why it will pay you to modernize NOW with Mack

1. *You may never again be able to trade in your 15 year or older Mack* at so good a price—for the simple reason that your dollars today will buy more than they ever did before.

2. *New Macks have the built-in stamina and endurance* that has made Mack famous—PLUS tested, new features that insure still lower hauling costs.

3. *Remember, when truck-price is the battleground of purchase . . .* proved quality, proved dependability, proved longest life, PROVED MOST TON-MILES PER DOLLAR, are the only yardsticks by which you can truly measure the purchasing power of your truck money.

So get in touch with your nearest Mack branch or dealer today. Ask for the trade-in price on your old Mack.

At the last official count of R. L. Polk, there were 12,970 MACK TRUCKS 15 years and older still in operation.

Modernize with Mack

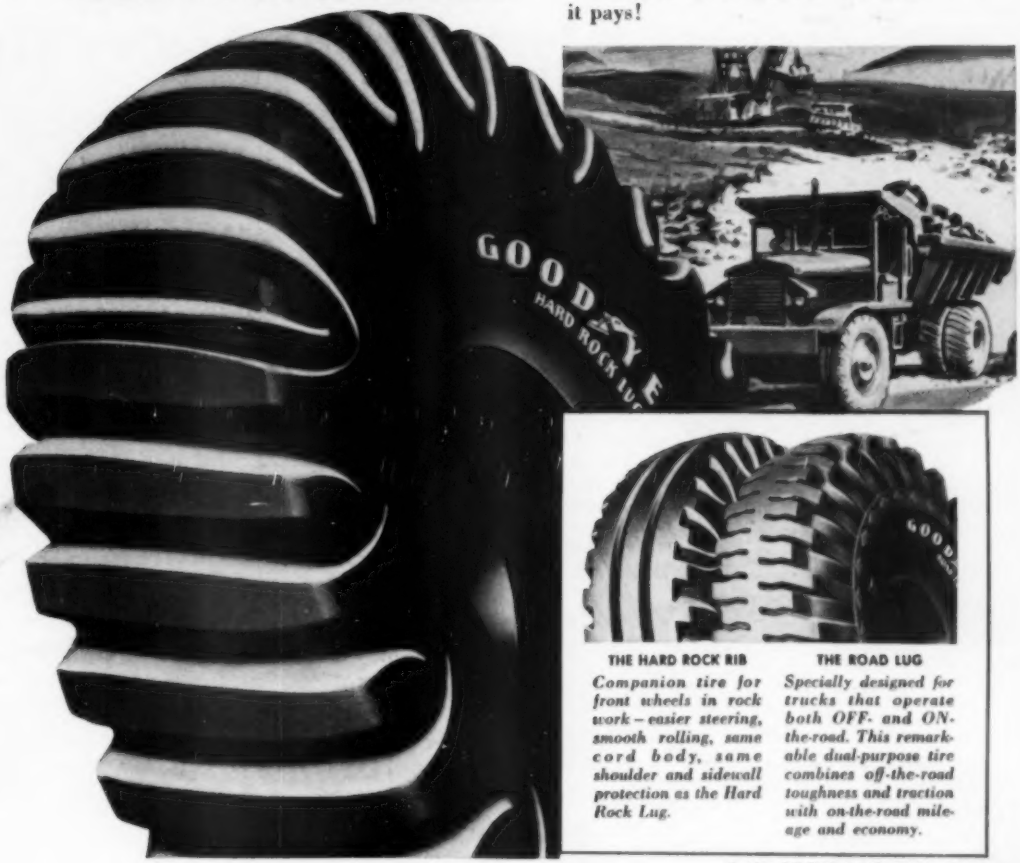
"Built Like A Mack —To Outlast Them All"

Mack Trucks, Inc., Empire State Bldg., New York 1, N. Y. Factories at Allentown, Pa.; Plainfield, N. J.; New Brunswick, N. J.; Long Island City, N. Y. Factory branches and dealers in all principal cities for service and parts. In Canada: Mack Trucks of Canada, Ltd.

Number 1 tire

for rock work

No tire outperforms Goodyear's famous Hard Rock Lug in tread-tearing back-breaking rock work. Feature for feature, it's your best buy: an extra-tough carcass—extra thick undertread protecting the carcass against bruising—big husky lug bars armoring tread and sidewalls against cuts and rips. And these lugs are designed to form a self-cleaning tread that's tops for traction either forward or reverse. Get the work tire that's head and shoulders above the rest for tire-killing operations. Always BUY and SPECIFY Goodyear—it pays!



THE HARD ROCK RIB

Companion tire for front wheels in rock work – easier steering, smooth rolling, same cord body, same shoulder and sidewall protection as the Hard Rock Lug.

THE ROAD LUG

Specially designed for trucks that operate both OFF- and ON-the-road. This remarkable dual-purpose tire combines off-the-road toughness and traction with on-the-road mileage and economy.

Road Lug– T. M. The Goodyear Tire & Rubber Company

We think you'll like "THE GREATEST STORY EVER TOLD" – Every Sunday – ABC Network

GOODYEAR

MORE TONS ARE HAULED ON GOODYEAR TIRES THAN ON ANY OTHER KIND

PIT AND QUARRY, January, 1950, Vol. 42, No. 7. Published monthly by the Complete Service Publishing Company, 538 South Clark Street, Chicago 5, Ill. Subscription price $3 for 1 year in the U. S. and possessions, Canada, Central and South America; elsewhere $5 additional for each year. Single copy 50 cents. Entered as second class matter February 28, 1932, at the Post Office at Chicago, Ill., under the Act of March 3, 1879.

Is your problem the handling of abrasive, lumpy or hot materials?

At right: Link-Belt 12" pitch steel apron conveyor, using ≻ Flint-Rim ≺ enclosed-oiling rollers at chain joints.

Below: Link-Belt "No-Leak" apron conveyor, showing the close fitting, accurately formed pans with overlapping offset side plates welded to the ends.

Above: Link-Belt heavy-duty apron feeder with manganese steel pans, manganese chain, manganese sprockets and supporting rollers. It is particularly suitable for handling large heavy lumps.

A Link-Belt apron conveyor may be the cost-cutting answer

Link-Belt apron conveyors and feeders are not only suitable for the low-cost handling of abrasive, lumpy or hot materials but also for general use when handling materials of other characteristics either horizontally or on an incline.

They resist damage from sudden impact shock and from sharp edges of large lumps; withstand severe loading conditions; and deliver materials in a uniform flow. Installations beneath hoppers or crushers are typical applications when apron conveyors are used as feeders. They handle practically any loose, bulky materials such as ore, coal, steel scrap, castings, foundry refuse, sand, cullet, etc.

Link-Belt apron conveyors and feeders are available in several types and in a complete range of sizes and weights for every service requirement. Get in touch with the nearest Link-Belt office for complete information.

LINK-BELT COMPANY Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Dallas 1, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8. Offices in Principal Cities.

11,708

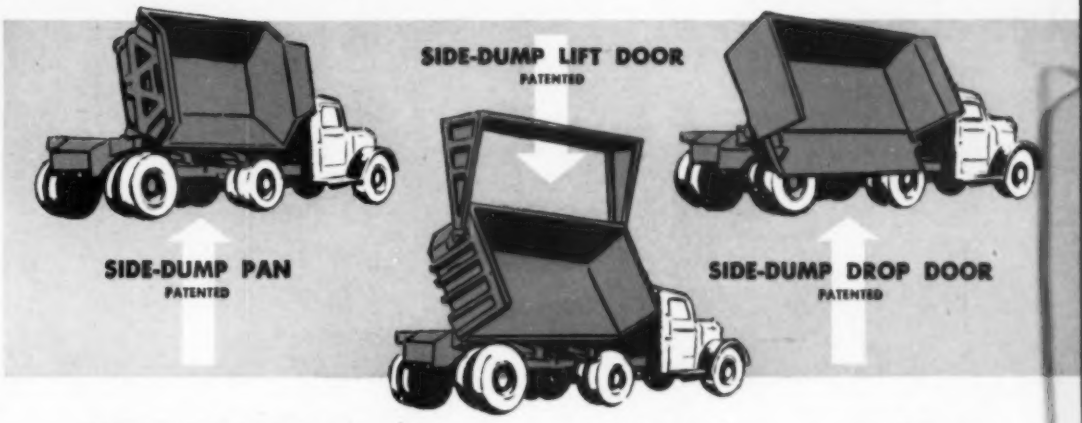
LINK-BELT

Power Transmission Machinery
"THE COMPLETE LINE"

See our exhibit, Sand & Gravel, Crushed Stone and Ready Mixed Concrete Shows, Jan. 23 thru Feb. 1, Stevens Hotel, Chicago

GO EASY ON COSTS!

GO *SIDE-DUMP* WITH EASTON



SIDE-DUMP trailers, truck bodies, tandems for low-cost hauling of earth, rock and ore

- There's a *right* EASTON Side-Dump truck body, trailer or tandem to meet every requirement in heavy-duty off-highway service.
- Choose either hydraulic dumping, or dumping by EASTON automatic overhead hoist.
- Choose *any make* of truck tractor. EASTON Side-Dumps serve with all makes.
- EASTON Engineering Counsel assists in selecting the *right* type of side-dump, of the *right* capacity for your job. Write for complete information:

Easton Car & Construction Company of Easton, Pa.

BUILT BY THE MAKERS OF
EASTON MINE AND QUARRY CARS

EASTON
Side-Dump
TRAILERS • TRUCK BODIES

MARINE MIRAGE!

Mirrors never made a Marine, sonny. It takes lots and lots of training, skill, and experience to make a good Marine . . . to make a good product . . . to make a good bag. Chase brings the experience of more than one hundred years to focus on packaging problems. Result: you get appearance and protection—you get a container that is designed to your specific needs! Check with Chase on this important subject today.

Bags for all industry and agriculture

- cotton bags of all kinds
- burlap bags
- paper & Multiwall bags
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- combination bags, liners, and specialties.

CHASE BAG CO. GENERAL SALES OFFICES, 309 WEST JACKSON BLVD., CHICAGO 6, ILL.

BOISE • DALLAS • TOLEDO • DENVER • DETROIT • MEMPHIS • BUFFALO • ST. LOUIS • NEW YORK • CLEVELAND • MILWAUKEE
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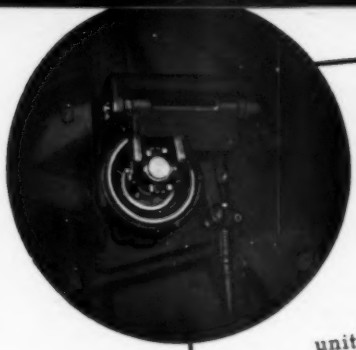
OKLAHOMA CITY • PORTLAND, ORE. • REIDSVILLE, N. C. • HARLINGEN, TEXAS • CHAGRIN FALLS, O. • HUTCHINSON, KAN. • CROSSETT, ARK



This is all there is to the "Feather-Touch" Clutch Control. No valves or tubing. Nothing affected by temperature. Nothing to refill.

Ease of Control means MONEY!

Easy control means faster operation and higher output per unit of time and it means a higher output curve as the day progresses because it reduces cumulative fatigue.

The Northwest brings you the "Feather-Touch" Clutch Control—a simple *mechanical* device that throws heavy drum clutches through the power of the engine. There are no pipes, no pumps, no valves and nothing to refill. It is not subject to influence by weather or temperature. It brings the operator the "feel of the load" at all times. Release is positive and your machine *cannot be shut down by control failure.*

In conjunction with the Northwest Dual Independent Crowd, that utilizes force other independent crowd shovels waste, it makes the rock jobs easier and assures greater output.

It is just another of the many Northwest advantages that make the Northwest a real Rock Shovel. You can't afford anything but the best for the *Key Spots* at the heart of the job. You should know about Northwest advantages. Ask for details and plan ahead. Why not place your order and be sure of a real Rock Shovel?

NORTHWEST ENGINEERING CO.

1515 Field Building, 135 South LaSalle Street, Chicago 3, Illinois

only the best for the heart of the job

MAKE YOUR KEY MACHINE A REAL ROCK SHOVEL

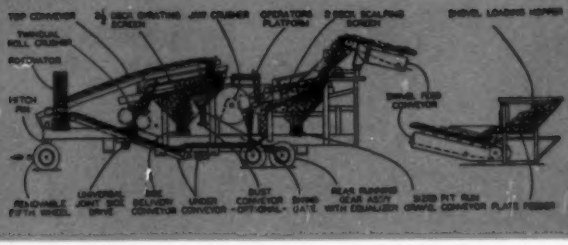
PROFIT

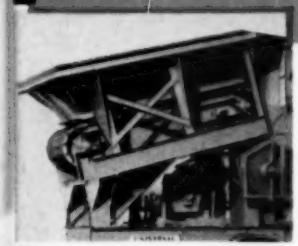
NORTHWEST

Convertible for Any Mining, Material Handling or Excavation Problem.

NOW! 3 STAGES OF CRUSHING 2 SCREENS IN 1 GRAVEL PLANT

UNIVERSAL 293-QS
Greater Capacity with Real Flexibility





This apron feeder replaces scalping screen for quarry rock.

Gravel pits containing large rock are no longer a problem. Because the jaw crusher is much larger, the 293-QS takes oversize rock ordinarily rejected. Universal Engineers took the famous Universal 293-Q TwinDual Pacemaker quarry plant, removed the apron feeder, and installed a scalping screen. This screen scalps pit oversize to the primary jaw crusher and screens out sand and gravel not requiring crushing. Material requiring secondary crushing is by-passed to TwinDual Rolls.

100% chips can be produced, or finished material from the scalping screen blended with crushed material from the plant. This flexible high production gravel plant can be converted in the field to quarry operation when the situation demands. One investment provides a plant that really meets today's demands and tomorrow's changing needs. It has many other features you should know. Write for complete details.

Jaw and roll crushers, hammermills, screens, conveyors and bins in any combination—stationary or portable.

UNIVERSAL ENGINEERING CORP., division of PETTIBONE MULLIKEN CORP.

619 C Avenue N. W., CEDAR RAPIDS, IOWA
Phone 7105

4700 W. Division St., CHICAGO 51, ILLINOIS
Phone SPaulding 2-9300

CUT COSTS

Avoid costly maintenance and replacement due to abrasion and corrosion

SELFVULC has shown sensational savings in scores of plants. This self-cold-curing plastic rubber compound is the standard repair material of modern industry. Old, badly worn, conveyor belts ready for the scrap heap can be resurfaced with SELFVULC and restored to use, outlasting the original. A few dollars for the application of SELFVULC will save thousands of dollars in new belts.

Wherever there is abrasion and corrosion, use SELFVULC. As a chute lining, it will outwear manganese steel plates. It cuts maintenance and replacement costs when used for lining centrifugal pumps, hoppers, mixing tubs, ore cars, truck cars, agitators, impellers, cables, and sand blast parts. It is easily applied by your own workmen on the job. Why not test SELFVULC for your own satisfaction, and prove its economy? We will ship you a TRIAL OUTFIT, containing 25 pounds of SELFVULC with Primer, tools and instructions for applying for $37.50 complete —

with self cold curing

Selfvulc

"Selfvulcanize to economize"

SELF-VULCANIZING RUBBER CO., INC.
32 West Randolph St., Rm. 1316, Chicago 1, Illinois

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32 W. Randolph St., Room 1316, Chicago 1, Illinois.

☐ Please send me your SELFVULC Bulletin.

☐ Enclosed is my purchase order for a TRIAL OUTFIT, including a 25-pound can of SELFVULC with cleaning fluid, primer, tools and instructions for applying.

NAME .....

ADDRESS .....

CITY ..... STATE .....

HarriSteel "WABBLY WEAVE"

WOVEN WIRE SCREEN CLOTH

eliminates plugging

Above unretouched photograph was taken after 9 days operation of a revolving screen in a Long Island sand and gravel plant. Upper half of screen, equipped with HarriSteel "Wabbly Weave" Screen Cloth, is almost free of plugging. Lower half, equipped with competitive regular weave, is about 95% plugged.

HarriSteel "Wabbly Weave" Screen Cloth insures peak capacity and screening efficiency because the openings will stay clear without plugging when screening sand, gravel, and other hard materials.

HarriSteel Screen Cloth is made of a special abrasion-resisting tough and hard steel that will outlast any screening medium on the market as much as 5 to 1.

The "Wabbly Weave" construction is such a sure-fire preventer of plugging that larger wires can be used, fewer cloth changes are required, and the screen needs no attention while operating.

These long-lived screens can be made for any type of vibrating, revolving, or conical screens.

First Introduced in 1939

Write for Bulletin

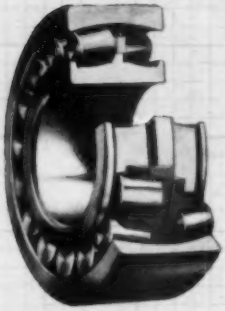
See Us at
Booth 37 in Chicago
Jan. 23 to Feb. 1st

HarriSteel Products Company

420 Lexington Ave. GRAYBAR BUILDING New York 17, N.Y.

More Power to Lima-Hamilton Power Shovels

...through TORRINGTON SPHERICAL ROLLER BEARINGS



On the power take-off shaft of its shovels, Lima-Hamilton Corporation uses Torrington Spherical Roller Bearings to transmit power smoothly with minimum friction loss and wear.

Under shock loads, barrel-shaped rollers align themselves freely in the spherical outer race . . . can't bind or drag. Even load distribution is secured without alignment adjustments, and maintained under deflection.

Maximum life expectancy results from this combination of self-alignment with tremendous load capacity in Torrington Spherical Roller Bearings. Secure these advantages in your heavy-duty equipment—our engineers will be glad to help.

THE TORRINGTON COMPANY
South Bend 21, Ind. • Torrington, Conn.
District Offices and Distributors in Principal Cities of United States and Canada

SPHERICAL ROLLER
TAPERED ROLLER
STRAIGHT ROLLER
NEEDLE
BALL
NEEDLE ROLLERS

TORRINGTON *SPHERICAL ROLLER* **BEARINGS**

If ABRASION is Your Problem...

look to NI-HARD for Your Answer

ONE OF THE HARDEST commercial products of the iron foundry is a *nickel-chromium white cast iron* trade-named "NI-HARD*".

HARDNESS RANGE

Its Brinell hardness ranges from 550 to 650 when sand cast, and 600 to 725 when chill cast.

This extreme hardness . . . at the moderate price of NI-HARD . . . provides abrasion resistance at lowest ultimate cost.

STRUCTURE

Unlike other cast irons . . . NI-HARD comprises a multitude of hard carbides firmly embedded in a matrix which is as hard as fully hardened steel. NI-HARD is unmachinable except in special cases. Finishing requirements are met by grinding or the use of cast-in-place machinable inserts.

PERFORMANCE

NI-HARD develops abrasion resistance two to three times better than that of unalloyed white iron. Therefore NI-HARD can economically replace white iron.

NI-HARD lasts one and one-half to two times as long as austenitic manganese or carbon steels, under conditions involving only moderate impact. Chill cast parts are stronger and more abrasion-resistant than comparable sand castings.

STRESS RELIEF

The strength and toughness of NI-HARD castings are increased fifty to eighty per cent, without loss in hardness or abrasion resistance, by a stress relieving treatment at 400-450° F. User experience has demonstrated the merit of specifying this treatment.

APPLICATIONS

Applications include: grinding balls, ball and rod mill liners, slurry pump parts, flotation impellers, piping, scoop lips, classifier shoes, roll heads, pulverizer rings, chutes and hopper liners, muller tires, plows, pug mill knives, clay augers. Also coke grizzly discs, crusher rolls, coal mine pumps, dredge pump impellers, liners, rings and sleeves. Also industrial food grinding burrs and attrition mill plates.

AVAILABILITY

Try NI-HARD wherever you encounter severe abrasion. See for yourself how its remarkable properties minimize replacements and repairs.

Authorized foundries throughout the country readily produce NI-HARD castings in all forms and shapes common to the iron and steel foundry.

INFORMATION AVAILABLE

Full information is yours for the asking. Write for the booklets, "Engineering Properties and Applications of NI-HARD", and, "Buyers Guide for NI-HARD Castings."

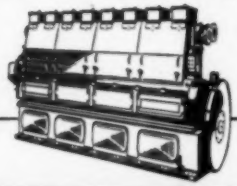
*Reg. U. S. Pat. Off.

EMBLEM OF INCO SERVICE

THE INTERNATIONAL NICKEL COMPANY, INC. 67 WALL STREET NEW YORK 5, N.Y.

DIESELS

assure consistently better economy...

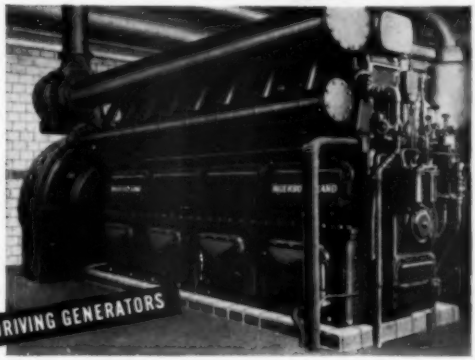


Ingersoll-Rand Diesels are heavy-duty, four-cycle engines that offer you *three* important savings. (1) Fuel consumption is low—less than 0.4 lb per bhp. (2) Compact design permits lighter foundations, reduced transportation and rigging costs. (3) Engineering and production excellence in every detail means lower-cost maintenance—and less of it.

Every Ingersoll-Rand machine is precision built to specifications that far exceed service requirements. Their extra *stamina* has proved its worth many times over. As one long-satisfied user puts it, "You must build these machines to last *forever*."

Back of every machine is Ingersoll-Rand's 30 years of history-making achievement in building better Diesels —the pioneering that developed solid-fuel injection and progressively reduced machine weight and fuel consumption per horsepower.

Write today for complete information on Ingersoll-Rand Diesels.



Ingersoll-Rand Diesels, with a medium speed of 720 rpm, permit the use of smaller, more efficient and less costly generators than are required with slower-speed engines.

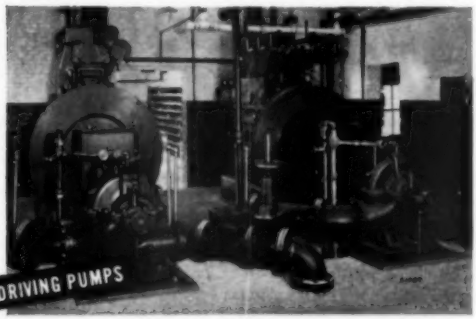
Type "S" Diesels are built in 3, 4, 5, 6, 7, and 8 cylinder sizes, for 225 to 600 hp.

Type "SS" supercharged Diesels—built in 6, 7, and 8 cylinder sizes for 675 to 900 hp—provide maximum economy of space and weight, by producing 50 per cent more power than unsupercharged engines.

The Ingersoll-Rand Type XVO Diesel-engine-driven compressor is a compact unit that assures maximum compressed air output per pound of fuel. With one gallon of fuel oil, the XVO compresses 5600 cu ft of air to 100 lb pressure.

The compactness and smooth-running balance inherent in its double-acting crosshead design permits the use of small and inexpensive foundations.

The actual free air delivery at 100 psi is 335, 700, 1075 and 1450 cfm for 2, 4, 6, and 8 cylinder units respectively.



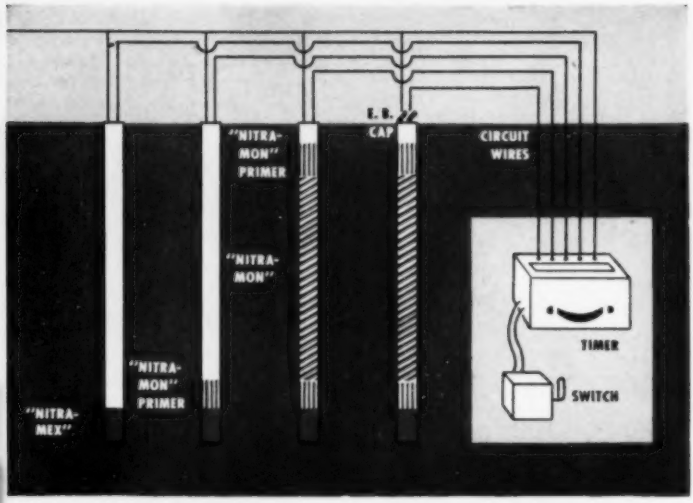
The matched coordination of Ingersoll-Rand Type "S" or "SS" engines and Ingersoll-Rand centrifugal pumps assures the utmost in pumping economy—for pipe line jobs or in pumping stations. Their coordinated design gives you a Diesel-powered pump free from critical speeds in the operating range. Flywheels, shafts, impellers, couplings and gears are all designed to keep liquids moving at minimum overall cost.

DIESEL ENGINES

Ingersoll-Rand

312-7 **11 BROADWAY, NEW YORK 4, N. Y.**

COMPRESSORS • AIR TOOLS • ROCK DRILLS
TURBO BLOWERS
CONDENSERS • CENTRIFUGAL PUMPS • OIL & GAS ENGINES



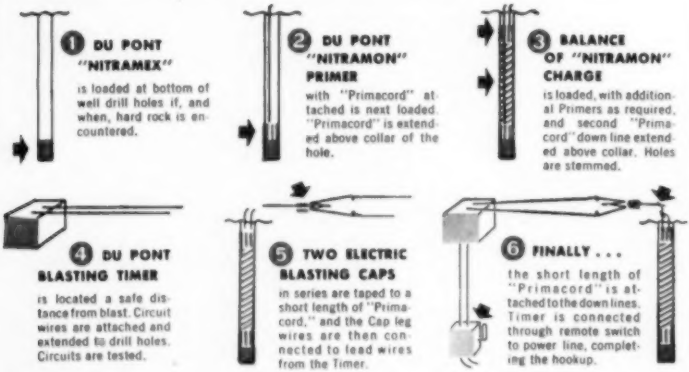
This Quarry Blasting Plan Promotes Safety, Efficiency and Economy

It's safer than conventional methods because the plan utilizes "Nitramon" and "Nitramex". . . the safest blasting agents available. These are fired with "Nitramon" Primers, which, in turn, are initiated with "Primacord." No caps are placed in drill holes.

It's more efficient because it creates a split-second blast with an unusual "peeling" action that greatly reduces ground vibration. It's a time-saver because charges can be safely loaded far in advance of firing. And wet conditions are no problem.

It's economical because the resulting blast improves fragmentation. Less secondary blasting is required; back break is reduced. Digging operations are speeded up and costs held to the minimum.

IT'S AN EASY PLAN TO FOLLOW . . . as the step-by-step sketches below show:

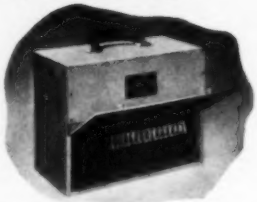

1 DU PONT "NITRAMEX"
is loaded at bottom of well drill holes if, and when, hard rock is encountered.
2 DU PONT "NITRAMON" PRIMER
with "Primacord" attached is next loaded. "Primacord" is extended above collar of the hole.
3 BALANCE OF "NITRAMON" CHARGE
is loaded, with additional Primers as required, and second "Primacord" down line extended above collar. Holes are stemmed.
4 DU PONT BLASTING TIMER
is located a safe distance from blast. Circuit wires are attached and extended to drill holes. Circuits are tested.
5 TWO ELECTRIC BLASTING CAPS
in series are taped to a short length of "Primacord," and the Cap leg wires are then connected to lead wires from the Timer.
6 FINALLY . . .
the short length of "Primacord" is attached to the down lines. Timer is connected through remote switch to power line, completing the hookup.

Ask the Du Pont Explosives representative in your area for complete information about this safer, more efficient and economical plan for quarry blasting. E. I. du Pont de Nemours & Co. (Inc.), Explosives Department, Wilmington 98, Delaware.

DU PONT EXPLOSIVES

BLASTING SUPPLIES AND ACCESSORIES

Du Pont Blasting Timer Creates Split-Second Blast that Reduces Vibration . . . Improves Breakage



The Du Pont Blasting Timer offers a selection of 15 circuits with delay intervals from 0.010 to 0.025 second in increments of 0.005 second. This extremely wide range permits a split-second blast that, in effect, "peels" the rock from the quarry face . . . resulting in less vibration, better fragmentation and reduced back break.

The Blasting Timer is so constructed that either 110, 220, 440, or 550 volt circuits may be used with assurance of excellent results.

See the Du Pont Blasting Plan Exhibit and the Blasting Timer in Booth 69 at the

NATIONAL CRUSHED STONE ASSOCIATION CONVENTION

in Chicago, Jan. 30 — Feb. 1, 1950

"NITRAMON"*

Quarrymen everywhere approve "Nitramon" because it *is* so safe. It cannot be detonated with commercial blasting caps, or by fire, friction, falling objects, or even the impact of ball ammunition. Charges are readily detonated with a "Nitramon" Primer . . . itself relatively insensitive. "Nitramon" contains no nitroglycerin and is non-headache-producing.

"NITRAMEX"†

A companion product to "Nitramon" that is designed for shooting especially hard rock formations.

Listen to "Cavalcade of America" Tuesday evenings—8 o'clock—NBC

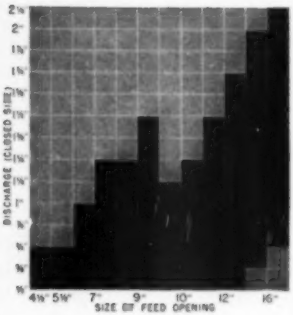
*Reg. Trade-Mark for nitrocarbonitrate blasting agent.
†Trade-Mark for Du Pont ammonium nitrate blasting agent.

DU PONT

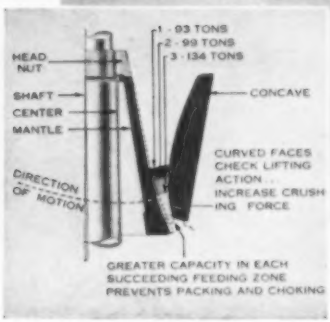
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Beat Increasing Production Costs with Better Equipment

Increased plant efficiency is a logical means of boosting profits in the face of today's rising costs. A major factor in achieving this is mechanical excellence of your equipment. For reduction crushing operations, the Traylor TY Reduction Crusher is unexcelled for capacity and simplicity of design . . . trouble-free operation with minimum attention and maintenance.



The great working range of Traylor TY Reduction Crushers is shown by this chart. Each bar indicates the degree of adjustment of a Traylor TY Reduction Crusher *with a single set of head and concaves.* One Traylor TY gives you "job flexibility" greater than several less adjustable machines. This, with the TY'S great capacity and low power requirement, will increase your profits.



The non-choking, self-tightening bell head and curved concaves of the Traylor TY Reduction Crusher are clearly shown in this sectional view. These and the all around bottom discharge *with no diaphragm* are your guarantee of exceptional capacity and choke-free, pack-free operation. Patented dust seal and automatic, force-feed lubrication with a water cooled oil reservoir assure long service with minimum attention.

Bulletin 5112 shows how Traylor TY Reduction Crushers . . . with their non-chokable bell heads and curved concaves . . . produce greater tonnages of a more uniform product remarkably free from slabs and fines. Booklet contains complete details and specifications. Write for your free copy today.

TRAYLOR ENGINEERING & MANUFACTURING CO.
107 Mill St., Allentown, Pa.

Sales Offices: New York, N. Y., Chicago, Ill., Los Angeles, Calif.
Canadian Mfrs: Canadian Vickers, Ltd., Montreal, P. Q.

Traylor

Rotary Kilns, Coolers and Dryers
Grinding Mills . Crushing Rolls
Jaw, Reduction and Gyratory Crushers

A "TRAYLOR" LEADS TO GREATER PROFITS

The **ROCKMASTER "16"** Blasting System Cuts The Cost Of Handling Rock!

The story could be summed up in two words: *improved fragmentation*. Or you might prefer *better breakage*. However, the details of the ROCKMASTER "16" story make interesting reading for blasters.

This better breakage has increased loading machine and shovel production as much as 40% in mines, pits, quarries, and construction jobs. Many operators have cut secondary shooting in half . . . others have eliminated it. Time once wasted in uncovering and setting aside big rocks now goes into productive work. There's a sequel to this story! Better breakage means lower costs in milling—less work for the crusher and less wear and tear on equipment.

Better breakage is just one of the many advantages of the new ROCKMASTER "16" Blasting System. It helps you produce more material per pound of explosive . . . gives you more footage per round. Sixteen periods—a wide choice of short or long milli-second delays—add up to better control over throw, backbreak, and material size . . . better control over noise and vibration. Sixteen delay periods fire in 550 milli-seconds! There is less strain on timbers and roof . . . less dust and a quicker return to the face.

From the face and the front office you hear: "ROCKMASTER "16" *is the greatest improvement in blasting methods since Atlas introduced milli-second blasting.*" Write for new booklet showing you how ROCKMASTER "16" fits into your operation.

ROCKMASTER "16" TIMINGS

Rockmaster No.	Avg. Time of Each Delay from Zero (milli-seconds)
0 (zero)	0 (inst.)
1	8
2	25
3	50
4	75
5	100
6	125
7	150
8	175
9	200
10	250
11	300
12	350
13	400
14	450
15	500
16	550

ROCKMASTER: Reg. U. S. Pat. Off.

ATLAS EXPLOSIVES
"Everything for Blasting"

CHEMICALS ATLAS EXPLOSIVES

ATLAS POWDER COMPANY, Wilmington 99, Del. • *Offices in principal cities* • *Cable Address*—Atpowco

NOW IN FULL OPERATION

our new plant for custom-made heavy-duty, multi-wall shipping sacks . . .

The long, white building in the foreground is the newly completed addition to the Kraft Bag Corporation's plant in St. Marys, Georgia.

If your product fits into a bag—we'll make the bag to fit your product.

- Cement
- Clay
- Gravel
- Gypsum
- Lime
- Plaster
- Sand
- Talc
- Crushed Stone Products

Inquiries Invited

Gilman PAPER CO. 630 Fifth Ave., New York

NOW... strengthened by more efficient methods of manufacture, more and more "KRAFT" Multi-Wall Bags of traditional quality will go to market, filled with the products of thousands of plants, from scores of industries.

NOW... you can be sure of more production, more variety and faster deliveries of "KRAFT BAGS" in any size, any type, sewn or pasted, valve or open mouth, and in any plies from 2 to 6.

NOW... also you can have a wider choice of linings and adhesives for specific commodities. Our printing facilities are also improved.

A "KRAFT BAG" is the strongest all-purpose multi-wall bag yet produced.

We should like an opportunity to prove that to you.

KRAFT BAG CORPORATION

A DIVISION OF GILMAN PAPER CO.
630 Fifth Avenue, New York 20, N.Y.
Plants at St. Marys, Georgia and Gilman, Vermont
Western Sales Office: Daily News Bldg., Chicago 6, Ill.

Send your product to market in a "KRAFT BAG"—*the container for a thousand uses!*

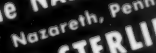
Here is the latest factual data on the improved McLanahan *Log Washers,* with many illustrations of installations all over the world—get your copy today.

Since 1835

here is how one company

Profits WITH Sterling MOTOR TRUCKS

The NAZARETH CEMENT COMPANY
Nazareth, Pennsylvania, NOW OPERATES
5 STERLING CHAIN DRIVE MOTOR TRUCKS



REPLACING

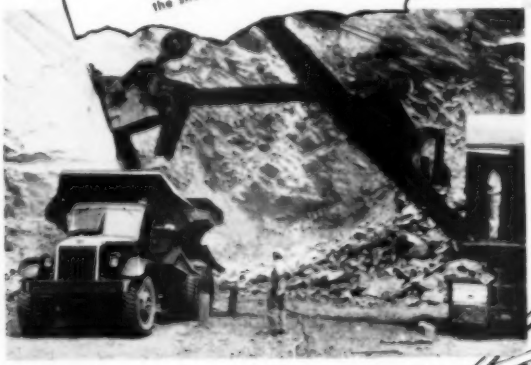
15 QUARRY CARS
11½ TON CAPACITY
each

4 DINKEY ENGINES

9375 FEET OF TRACK

This Conversion Means a Reduction in Operating Cost and Increased Profit

without sacrificing output, which is evidenced by the fact that every eight hour day these vehicles haul an average of 2,200 to 2,500 tons of rock one-quarter of a mile from the shovels to the crusher plant.



The Nazareth Cement Company selected the Sterling HCS265H chassis for their work because of its dual chain drive construction with the "3-in-1" Super-Traction differential. Grades up to 18% are negotiated with 15 tons of rock. The performance of the first two trucks resulted in the Nazareth Cement Company placing a repeat order for three additional duplicate units — a certain sign of satisfaction.

For over 42 years, Sterling has specialized in producing motor trucks that render economical, efficient and dependable service. Let us explain in detail the advantages available only in Sterling heavy-duty motor trucks.

Sterling
MOTORS CORPORATION
MILWAUKEE 1, WISCONSIN
BRANCHES AND DEALERS IN PRINCIPAL CITIES

CLIP COUPON and MAIL TODAY

STERLING MOTORS CORPORATION, Milwaukee 1, Wisconsin
Gentlemen:
Please provide me with additional information on Sterling motor trucks.

Name .....
Address .....
City and Zone ..... **State** .....
Firm Name ..... **Position** .....

DIAMONDS to GRAVEL!

Many Non-Metallic Minerals Are Now Being Upgraded *Accurately and Economically* by Heavy-Media Separation

Each year the record of results becomes more conclusive: ***Heavy-Media Separation is the low cost way to upgrade plus 10 mesh non-metallics . . . so low cost that it can be profitably used to upgrade gravel, cement rock and similar materials with a narrow per-ton profit margin.***

Reasons-why are inherent in the efficiency and economy of the process. Results are confirmed by the constant increase in both tonnage and scope of application. Over 70 plants, with a combined capacity of many millions of tons per year, are now operating and being built.

What Heavy-Media Separation Does.

Heavy-Media Separation separates valuable mineral from unwanted deleterious material by virtue of their differences in specific gravity. Separation takes place continuously and automatically in a closely-controlled, recoverable fluid medium whose specific gravity is maintained between that of the wanted and unwanted fractions of the feed. Actual plant tests show that Heavy-Media Separation closely duplicates "heavy-liquid" results over a wide size-range and at any predetermined gravity from 1.25 to 3.75. It is the only low-cost process that provides automatic, continuous and complete separation of large and variable amounts of unwanted materials, regardless of how the feed fluctuates.

How Heavy-Media Separation Works.

You set the gravity of the Heavy-Media pool (a mixture of finely-ground magnetite or ferro-silicon and water) at the specific gravity you need to get the quality you want. From then on the Heavy-Media Separation unit maintains the separating gravity within ± 0.01. The light material floats, the heavier material sinks. Separation is accurate, automatic, continuous . . . as certain and dependable as the force of gravity. The "heavy medium" is washed off both the wanted and unwanted fractions, recovered by magnetic separators and continuously fed back to the separating vessel. Some does get lost. But some plants use as little as ¼ lb. of medium make-up per ton of feed to maintain the separating gravity at exactly the right point for precise separation.

If your shipping specifications change, the operating gravity can be quickly and easily changed. Labor costs are low. Hand labor may be reduced or eliminated. Equipment is essentially standard units, proved by years of use. First cost is seldom a deterrent.

AMERICAN Cyanamid COMPANY

"Custom-Built" and Semi-Portable "Package Plants" Available.

Several types of Heavy-Media Separation plants are available — all functioning on the same principles but differing in design details. For extensive mineral deposits operated at high tonnage, "custom-built" Heavy-Media Separation plants can be built through the accumulated experience of several large engineering-construction firms.

For limited deposits and for construction jobs, pre-fabricated semi-portable "packaged plants" with capacities up to 200 tons per hour are available on a purchase or rental basis. These can be erected on the site within a few weeks by a small crew and can be dismantled, moved and re-erected with no more difficulty than other major pieces of construction machinery.

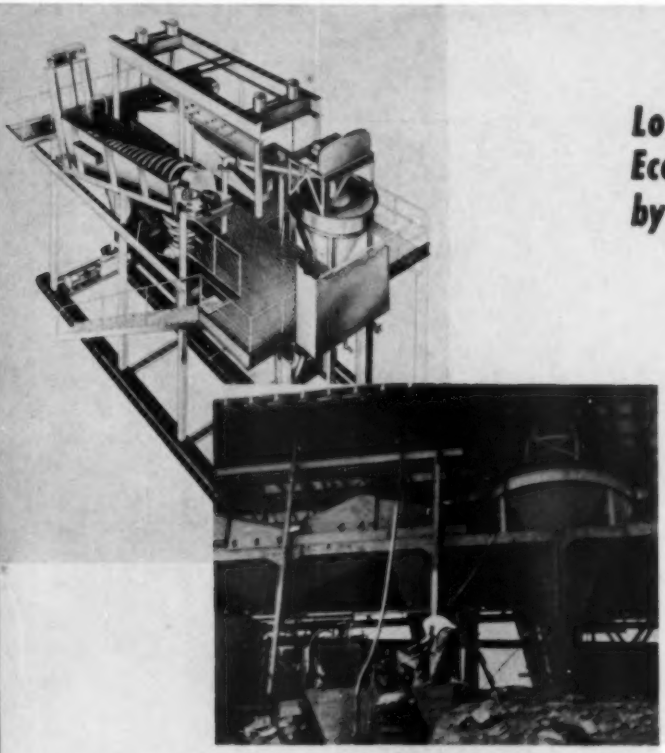
How Cyanamid Can Help You.

Cyanamid does not build or lease Heavy-Media Separation plants. We furnish technical service in the applicability of Heavy-Media Separation to your materials, cooperate with engineers of your choice in the design and construction of plants, and assist in tuning up the installation for most efficient operation.

We are prepared, after preliminary discussion of your problem without cost or obligation, to run carload tests on your material in the continuous unit Heavy-Media Separation pilot plant in the Cyanamid Mineral Dressing Laboratory at Stamford, Connecticut. We can also give you the benefit of the considerable amount of commercial data resulting from the treatment of many millions of tons by Heavy-Media Separation on a long list of metallic and non-metallic minerals.

Take This Step Now.

It costs nothing to become fully informed on Heavy-Media Separation and to learn how it may help you to improve quality, lower mining costs, widen your market and otherwise put you in a position to operate more profitably in the competitive days ahead. The first step is to send for *Mineral Dressing Notes #14, Heavy-Media Separation*, a 48 page illustrated, technical booklet explaining the process in detail. The coupon below is for your convenience.



Low-Value Minerals Economically Treatable by Heavy-Media Separation

Andalusite	Gypsum
Barite	Iron Ore
Cement Rock	Magnesite
Coal	Pearlite
Diamondiferous Ground	Phosphate Rock
Fluorspar	Potash
Garnet	Salt
Gravel	Spodumene

And very probably many, many more!

30 ROCKEFELLER PLAZA
NEW YORK 20, NEW YORK

Please send without obligation _ copies your 48 page illustrated book: Mineral Dressing Notes #14, Heavy-Media Separation.

YOUR NAME_____

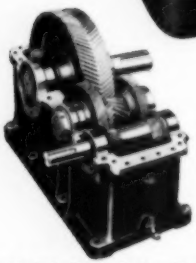
COMPANY_____

ADDRESS_____

_____

THIS GEAR ARRANGEMENT
GIVES PERFECT BALANCE & SYMMETRY

above:
Triple Reduction
Herringbone Reducer



Double Reduction Herringbone Reducer

Single Reduction Herringbone Reducer

. . and Bearings "Share the Load" *Equally*

. . another feature of

Philadelphia
HERRINGBONE
Speed Reducers

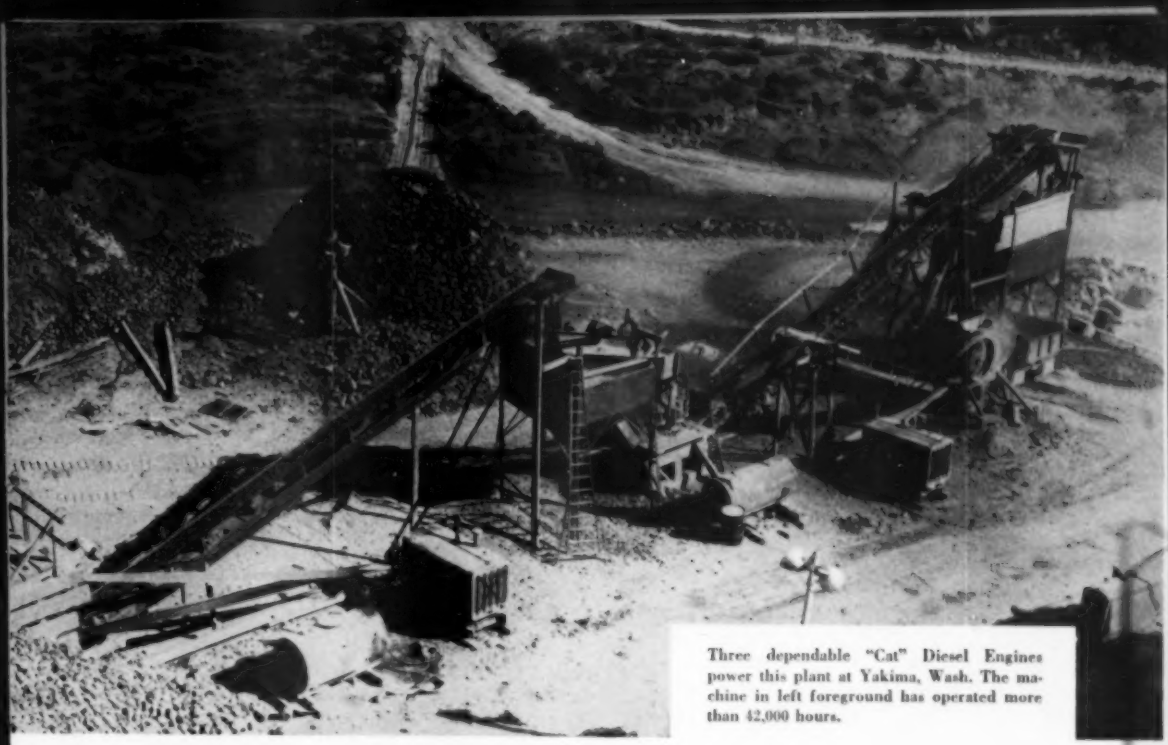
● Just one of the well planned construction features of these widely used Reducers, is the "Gear Arrangement" in the Double and Triple Reduction Type . . . the gears are located symmetrically in relation to the centerline of the housing, rather than the usual offset arrangement. It will be noted that 2 standard bearings are used on each shaft and *each bearing absorbs an equal load*. (In comparison to the offset arrangement of Herringbone Gears, which result in unequal bearing loads, while similar arrangement of single helical gears impose an additional load by the thrust action) . . . It is evident then, that Philadelphia Herringbone Reducers with double helical gears spaced equidistant from the bearings in the first and intermediate reductions, with a continuous tooth herringbone gear set on the centerline for final reduction, *provide perfect balance and symmetry*.

For complete construction details, get our Catalog H-49. Please write on your Business Letterhead.

Philadelphia Gear Works, INC.

ERIE AVE. AND G ST., PHILADELPHIA 34, PA.
NEW YORK • PITTSBURGH • CHICAGO • HOUSTON
IN CANADA: WILLIAM AND J. G. GREEY LIMITED, TORONTO

Industrial Gears and Speed Reducers
LimiTorque Valve Controls



Three dependable "Cat" Diesel Engines power this plant at Yakima, Wash. The machine in left foreground has operated more than 42,000 hours.

HERE'S CRUSHER POWER THAT WON'T BE LICKED!

IT TAKES real engine "guts" to stand up to the load and the dust of a crusher plant year after year. The three "Cat" Diesels that power the crushers for C & E Construction Company, Yakima, Wash., deliver a total of 290 yards of rock an hour, and don't know the word "quit."

The oldest engine in the team is a veteran of over 42,000 work hours and is still going strong. Says the owner: "These engines, like all 'Caterpillar' products, are proved equipment. They're well sealed against dust, and that's important to us."

Your "Caterpillar" dealer has the right engine for *your* job —and the parts and service facilities to keep it working profitably long after it's paid for itself. See him today, or mail the coupon.

CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS

LOOK UNDER THE HIDE

Lubricating oils break down at high operating temperatures, forming carbons and gums—enemies of long engine life. To prevent lube oil breakdown, "Caterpillar" Engines are equipped with oil coolers. Pistons are oil sprayed to remove heat. Controlled oil temperature reduces maintenance costs —adds to owner profits. *Look under the hide for quality.*

CATERPILLAR
REG. U. S. PAT. OFF.
DIESEL

ENGINES • TRACTORS
MOTOR GRADERS
EARTHMOVING EQUIPMENT

CATERPILLAR TRACTOR CO.
Box PQ-1, Peoria, Illinois

Please send me your free informative booklet, "The Right Combination for Crushing."

NAME _____

ADDRESS _____

CITY _____ STATE _____

Which One is You ?

type one

Do you drill holes all over the lot? A few in this cut—a few for that footing? Then you'll choose the lightweight LCM—the ideal wagon drill for use where moves are frequent.

type two

Do your jobs call for fast drilling? Big footage on every shift? Then you'll want the universal URM—for the last word in wagon drill efficiency and performance.

type three

Do you run into a lot of heavy rock excavation—with cuts up to 40 feet deep? Then the Gardner-Denver WD is the wagon drill for you. It's specially designed for deeper holes.

LCM FEATURES:

Lightweight—easy to move
Positive feeding pressure
Convenient feed and drill controls
Highly maneuverable
Equipped for 6-foot steel changes

URM FEATURES:

Simple, responsive controls
Maintains correct bit pressure
Positive, effortless blowing
Adjustable wheels and mast
Handles 6-foot steel changes

WD FEATURES:

Extra powerful blowing
Pneumatic feed
Power operated mast
Adjustable to any position
For 10 or 15-foot steel changes

Whether your drilling pattern fits Type 1, 2 or 3—choose a Gardner-Denver Wagon Drill for faster, easier drilling. Write for Bulletin WD-1.

GARDNER-DENVER *Since 1859*

Gardner-Denver Company, Quincy, Illinois

In Canada: Gardner-Denver Company (Canada) Ltd., Toronto, Ontario

Specify the steel that defies wear

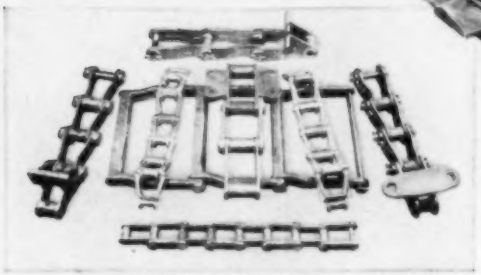
TISCO *Hadfields* MANGANESE STEEL

"THE HARDER IT WORKS, THE HARDER IT GETS"

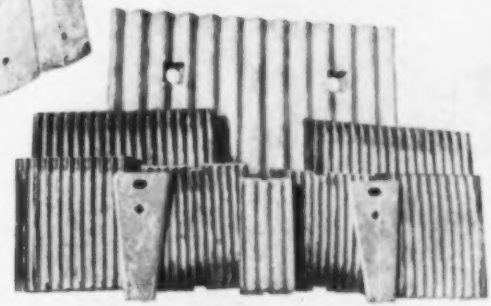
TISCO Manganese Steel Pulverizer and Hammermill Parts

TISCO Manganese Steel Ball Mill Liners

TISCO Manganese Steel Dipper Teeth



TISCO Manganese Steel Chain for Conveyors, Elevators, Dredges, etc.



TISCO Manganese Steel Jaw Plates for Crushers

YES... **TISCO** Hadfields Manganese Steel actually gets harder, more wear resistant under the heavy impact and abrasion of crushing, hammering, pulverizing and handling rock products. Since its introduction over 50 years ago, when it made the crushing of trap and granite rock commercially possible, TISCO has proved its durability and low cost in the production of millions of tons of aggregate.

Today, TISCO Hadfields Manganese Steel continues to be the No. 1 steel for wear resistance in the quarrying industry. Long experience has developed casting and inspection techniques that assure sound castings.

When ordering new equipment or replacement parts from your supplier, be sure to specify TISCO Manganese Steel. Consult our metallurgists on any special requirements.

OTHER TAYLOR-WHARTON PRODUCTS

Manganese-Nickel Steel Weld Rod
High Pressure Gas Cylinders
Frogs, Switches, Crossings, Special Trackwork for Industries and Mines

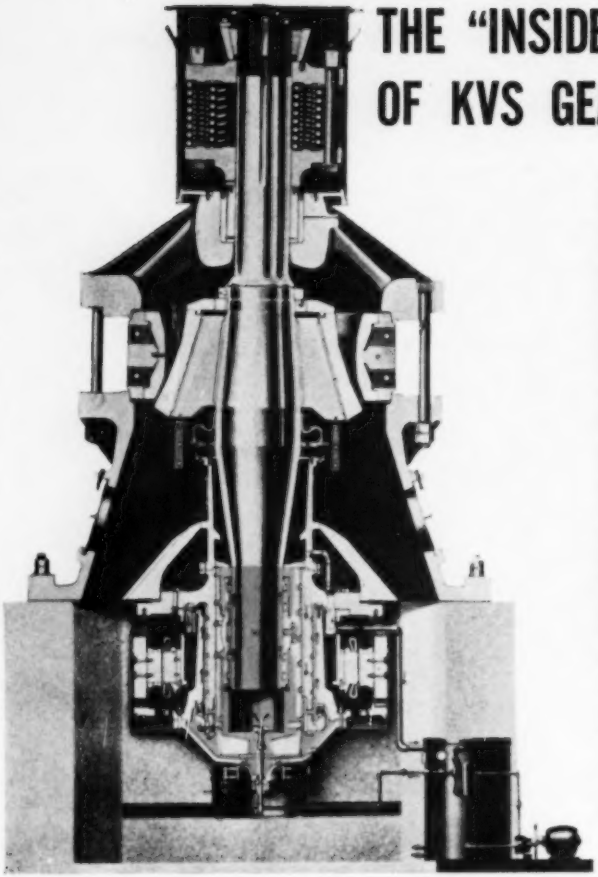
FOUNDED 1742

TAYLOR-WHARTON IRON AND STEEL COMPANY

HIGH BRIDGE, N. J. EASTON, PA.

TISCO *first in* MANGANESE STEEL

IT COSTS LESS TO OWN THE BEST!



CUTAWAY DRAWING OF ROLLER BEARING TYPE "S" CRUSHER

THE "INSIDE STORY" OF KVS GEARLESS CRUSHERS

The oiling system is the heart of every crusher. When it fails, bearings burn out . . . weeks of valuable time are lost in making replacements . . . work stops . . . and so does income! KVS offers the solution to this ever-present problem with their positive oiling system. Built without "gimmicks" and trick safety devices that all too often fail to work, this system is virtually fool-proof.

A simple gear pump draws oil from a serpentine cooled tank and, under pressure, pumps it through a filter to a compartment below the ball socket bearing. Oil is then forced UP between this bearing and the shaft and overflows to the eccentric and pulley bearings. This floods the roller bearings, and the oil then overflows into the storage tank. A bypass releases the pressure back into the storage tank, thus maintaining a constant and even flow at all times.

It has been proved through countless tests and is, today, the "Heart" of the famous Kennedy Gyratory Crushers. It provides a system that oils vital parts without failure and without depending on someone's memory.

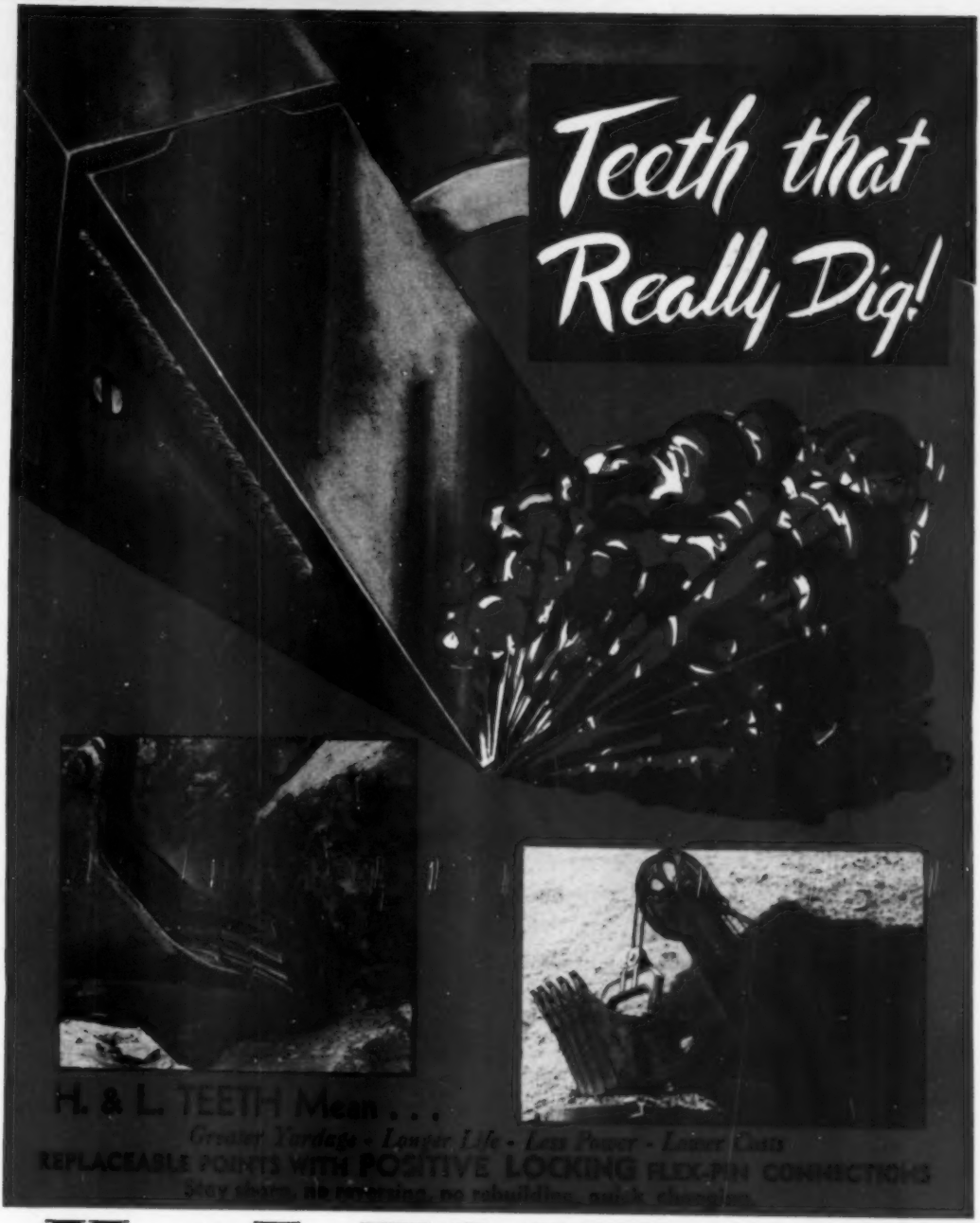
IT'S CORRECTLY DESIGNED TO LAST FOR YEARS

There is no substitute for quality and KVS oiling systems are recognized everywhere that heavy duty crushers are used, as TOPS in their field. They prove, year-in, year-out, that "It Costs Less To Own The Best." Specify KVS and be SURE!

Send for engineering bulletin describing this system

KENNEDY-VAN SAUN MFG. & ENG. CORPORATION

TWO PARK AVENUE, NEW YORK 16, N. Y.


Teeth that Really Dig!
H. & L. TEETH Mean . . .
Greater Yardage - Longer Life - Less Power - Lower Costs
REPLACEABLE POINTS WITH POSITIVE LOCKING PLUG-PIN CONNECTIONS
Stay sharp, no re-tipping, no rebuilding, quick changing
H. & L. TOOTH CO.
Pioneer Manufacturers of Two-Part Teeth
MONTEBELLO 1548 SO. GREENWOOD AVE. CALIFORNIA

HEAVY-DUTY

KOEHRING HEAVY DUTY

KOEHRING HEAVY-DUTY SHOVELS CAN CUT YOUR EXCAVATING COSTS

Here is a profitable way to cut your stripping and materials handling costs all around. Match high-speed Dumptor-hauling with dependable, heavy-duty Koehring excavators. It's a big production team, built to work together. Dumptor's heavy-duty construction, easy-loading design, fast hauling and dumping, match Koehring excavator's rugged digging ability and fast-operating speeds . . . give you matched speed and strength to keep output high, costs low. For complete facts on the big 1½-yard 605 (illustrated) . . . ¾-yard 304, or ½-yard 205 excavators, see your Koehring distributor . . . or write for bulletin.

for *heavy hauling...*

DUMPTOR BODIES BUILT FOR HEAVY ROCK SERVICE

To meet the toughest hauling conditions of mine, quarry and construction service, Koehring Dumptors have a ton of strength for every ton of payload. Heavy-duty bodies stand up under the severest shocks of loading rock from big mine and quarry shovels. All-welded sides, ends and bottom are heavily ribbed with 4" channels. High-carbon steel gives extra strength at stress points where abrasive rock action is most severe. Three-layer bottom of seasoned 1-⅝" oak between two 5/16" steel plates cushions shocks.

HEAVY-DUTY CHASSIS TAKES ROUGH HAUL ROAD SHOCKS

Rugged, 8" ship-channel main frame... 4" chrome steel drive axles . . . and cast alloy-steel "I" beam steering axle, add extra strength to Dumptor chassis. Big tires absorb road shocks. There are no leaf springs . . . only one big-double-coil spring on oscillating steering axle. That means no spring shackles to lubricate . . . no spring maintenance. And . . . you have 6 HP for every ton of gross vehicle weight for faster acceleration, less shifting, more grade-ability. Dumptors climb grades up to 24% with full load.

NO BODY HOIST MAINTENANCE WITH GRAVITY DUMP

You don't lose time or spend money on body-hoist maintenance because Dumptors have no troublesome body hoists. Gravity dumps the full 6-yard load in one second. Free swinging, kick-out pan breaks suction, keeps dumping fast even in stickiest materials . . . adds an extra 3/16" steel to Dumptor bottom. Heavy-duty construction like this is your assurance that Koehring Dumptors will profitably stand up to your heaviest off-the-highway hauling assignments. Let your nearest Koehring distributor show you how.

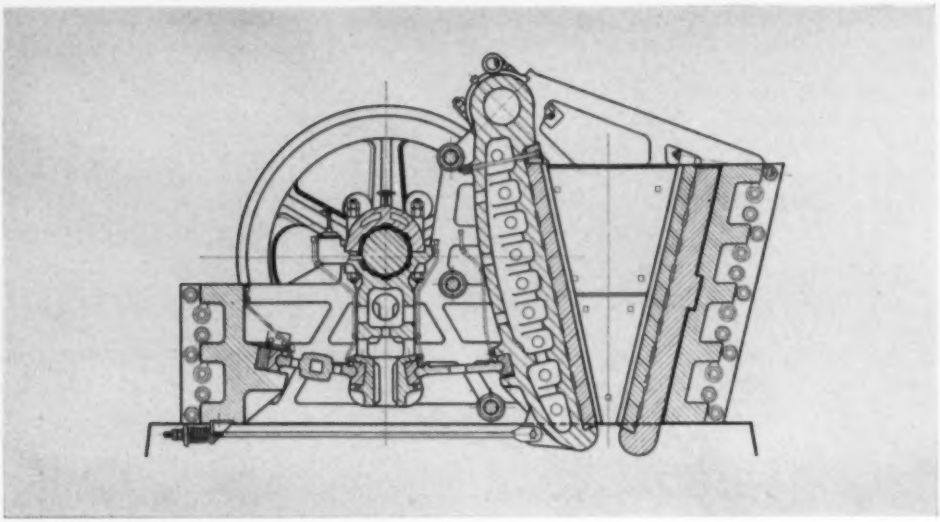
KOEHRING COMPANY, Milwaukee 10, Wisconsin

Subsidiaries: PARSONS • JOHNSON • KWIK-MIX

Dumptor—Trademark Reg. U.S. Pat. Off.

IT COSTS *LESS* TO OWN THE BEST!

KVS SWING JAW CRUSHER



BUILT FOR HEAVY DUTY AND MAXIMUM SERVICE

Frame built of HERCULITE steel, tensile strength up to 60,000 pounds per square inch. Swing jaws, 18″ and larger, are reversible and interchangeable. Able to convert large size rock into screen sizing, swiftly, efficiently and economically.

Both jaws share the load because "Swing" jaw and stationary jaw are set at the same angle. Less power required for swinging and crushing.

Available in 40 different sizes from 4″ x 6″ up to 66″ x 96″. Sturdy construction and selected steel adds years to normal life. Reduces "Time Off" to a minimum, cuts maintenance costs, assures continuous operation. Low operating costs help every crusher pay for itself out of increased earnings.

Used by leading producers of aggregates. Their endorsement is proof that "It Costs Less To Own The Best" when you specify KVS top quality crushing equipment.

Send for bulletin describing KVS crushers

KENNEDY-VAN SAUN MFG. & ENG. CORPORATION

TWO PARK AVENUE, NEW YORK 16, N. Y.

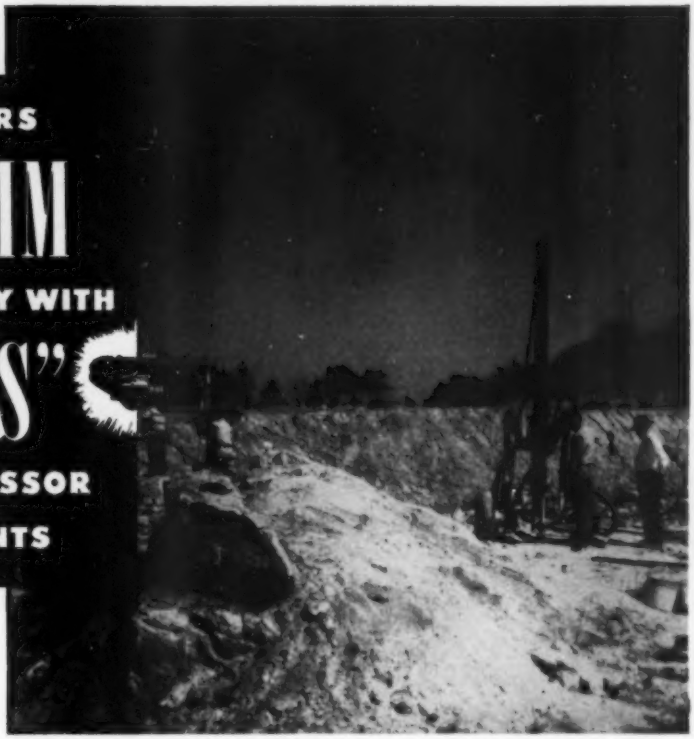
FOR 50 YEARS

SCHRAMM

HAS LED THE WAY WITH

"FIRSTS"

IN AIR COMPRESSOR IMPROVEMENTS



Schramm #315 Diesel Engine Driven Compressor operating wagon drill on new extention of Pennsylvania Turnpike.

SCHRAMM TOOLS AND ACCESSORIES INCLUDE

WAGON DRILLS
ROCK DRILLS
PAVING BREAKERS
TRENCH DIGGERS
CLAY SPADES
SHEETING TOOL
BACKFILL TAMPER
TIE TAMPER
CONCRETE VIBRATOR
CHAIN SAWS
CIRCULAR SAWS
AIR HOSE
ROCK BITS
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CHISELS

SCHRAMM FIRSTS

First really portable Engine Driven Compressor built • Multi-Cylinder Engine Driven Multi-Cylinder Compressors • Designed and built SCHRAMM engines for operating SCHRAMM Compressors • Portable Compressor with clutch between Engine and Compressor • Portable Diesel Engine Driven Compressor • Electric starting standard on all engine driven models • Built two-staging portable Engine Driven Compressors, also air-cooled single and two stage models • Perfected mechanical intake valve, the most progressive improvement in Portable Compressor design, eliminating out-moded two stage and air cooled compressors • The *PNEUMASTAT* another SCHRAMM innovation, that cuts fuel costs up to 50%. Also the SCHRAMM engine and compressor block with interchangeability of parts, became standard equipment on the model #105 • Built live, self-sealing, easy turning Hose Reels • Designed large substantial tool boxes for carrying large assortment of air tools.

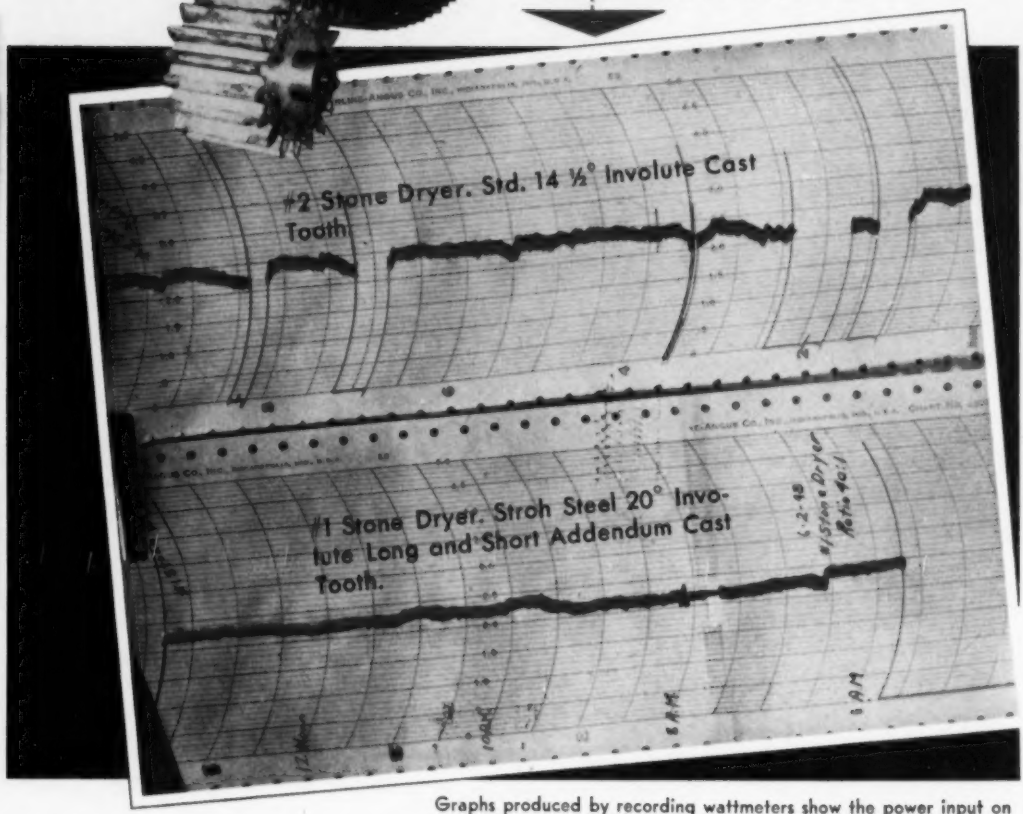
Write today for detailed information.

SCHRAMM INC. THE COMPRESSOR PEOPLE • WEST CHESTER • PA.

STROH

These GRAPHS compare the actual performance under practically identical operating conditions of HIGH REDUCTION CAST TOOTH GEAR DRIVES *on 8′ x 100′ A.C. Stone Dryers*

Gear 104 Teeth, 4" C.P., 14" Face
Pinion 16 Teeth, 4" C.P., 14" Face



Graphs produced by recording wattmeters show the power input on the above dryers, operated in one of the most modern plants producing cement today.

The smoother flow of power on the dryer operated by 20° Involute Long and Short Addendum Cast Tooth Gearing is apparent.

Wear-resistant Stroh Alloy on the active contour of the gear teeth maintains their original contour and insures continuity of a smooth flow of power.

STROH PROCESS STEEL CO.
Pittsburgh 12, Pa., U. S. A.
Wallace Young, South American Representative

(Slide rule, calculus, counting on your fingers)...

Bethlehem Wire Rope Means Low Cost per Unit of Work

Actually, it's as simple as 2 + 2 = 4. All you do is divide the purchase price of the rope by the total units of work it does in its life. The answer, of course, is cost per unit of work—the only *real* measure of wire rope economy.

What is a unit of work? It can be a ton of rock moved by a power shovel. Or a car of coal hauled up a slope. Or a ton-mile in oil-country rotary drilling. These are but three examples; there are many others. It isn't difficult to record, or closely estimate, the amount of work that a wire rope accounts for. That total will be high—and the unit cost *low*—when your choice is a Bethlehem rope.

It isn't first cost that determines whether a wire rope is expensive or economical. The rope labeled "Bargain" is frequently quite the reverse. You've found a bargain only when the rope cost is low with respect to the useful work accomplished.

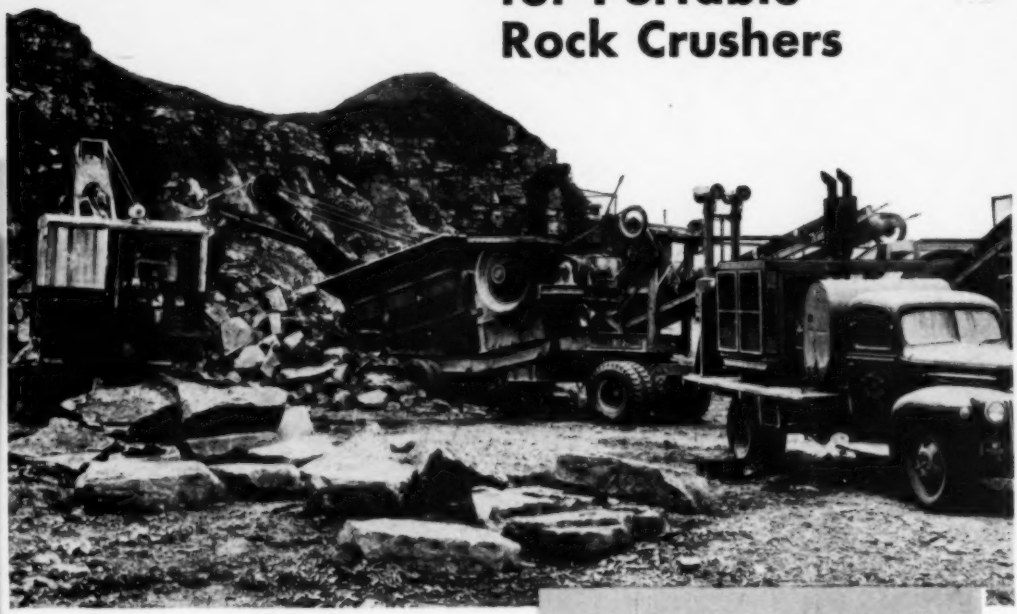
On this basis—the only true yardstick—Bethlehem rope is a genuine "buy." Every foot, every inch of it, is built for service. . . built to give you *low* cost per unit of work. You can order it with confidence.

BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation
Export Distributor: Bethlehem Steel Export Corporation

Best Power there is

for Portable Rock Crushers



A truck-mounted GM Diesel Twin Six drives the 40" hammermill, a single six powers the 20" x 36" jaw crusher on this Cedar Rapids portable unit, one of two GM Diesel-powered plants operated by B. L. Anderson in eastern Iowa. Each plant averages 130 tons of ¾" road rock per hour. Operating 18 GM Diesel engines in various pieces of equipment, Anderson has lost only one day's operation in three years due to engine failure.

THAT'S what hundreds of operators like B. L. Anderson of Cedar Rapids, Iowa, are saying about General Motors Series 71 Diesels—and with good reasons.

GM Diesels pack lots of rugged power, yet their sensible size and weight make them easy to move and simple to set up. Efficient factory-built multiple engine units are available. Virtually every power need can be filled.

ALL GM Diesels are 2-cycle, with power at every piston downstroke. They're smooth-operating—easy to start on their own fuel—and quick to respond when picking up a load.

These qualities are important in any rock-crushing operation. So it's certainly worth while to get full information on these hard-working, easy-to-maintain 2-cycle Diesels. Drop us a line and we'll see that you get it.

DETROIT DIESEL ENGINE DIVISION

SINGLE ENGINES... Up to 200 H. P. **DETROIT 28, MICHIGAN** MULTIPLE UNITS... Up to 800 H. P.

GENERAL MOTORS

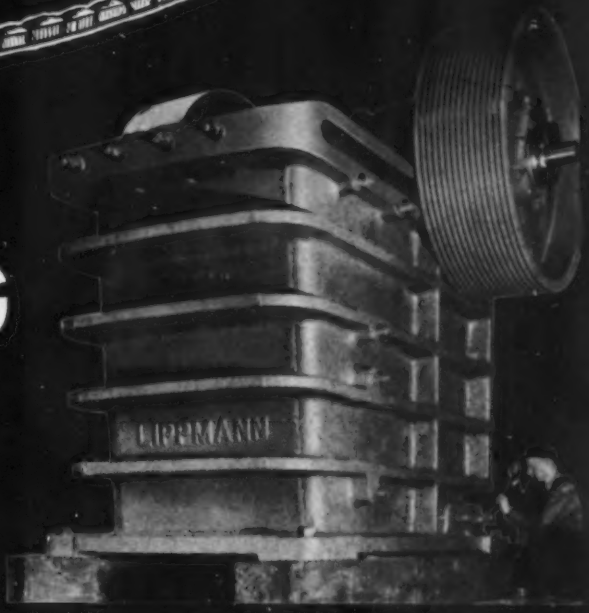
GM GENERAL MOTORS DIESEL POWER

DIESEL BRAWN WITHOUT THE BULK

Another Example of **Why Leading Contractors Prefer Lippmann Equipment**

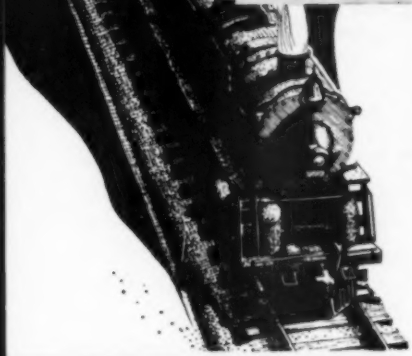
Crushes

A MILE-LONG TRAINLOAD OF HARD LAVA ROCK PER DAY!



36 x 48 GRIZZLY KING was fed by two 2-yard shovels, reduced hard lava rock to minus 6 in. at 360 tons per hour. Lippmann Jaw Crushers have extremely low power consumption, have never had a shaft or bearing failure with proper maintenance.

Lippmann 36x48 GRIZZLY KING, World's Largest Overhead Eccentric Jaw Crusher, Hits Amazing Peak of 5700 Tons per Day for Big Colorado Quarry.



On large jobs or small, more and more experienced operators are using Lippmann equipment. Take the case of the big Colorado quarry that was awarded a huge contract to make aggregate from lava rock so hard that ordinary steel drill bits would not do the work and carbide tips had to be used.

This contractor, despite a slow start because of bad weather, wound up his first season comfortably ahead of schedule. To do this, he operated his 36x48 Lippmann GRIZZLY KING Jaw Crusher two eight-hour shifts . . . hit a peak of 360 tons per hour . . . *5700 tons per day!*

Blast-run rock was fed on a Lippmann Super-Duty Feeder to the crusher. GRIZZLY KING'S extra-long jaws, engineered crushing action, complete oil lubrication and alloy steel construction provided the tremendous capacity required at extremely low maintenance costs. (Actually only a few bolts were replaced during the entire seven month season; no die replacements, even with this highly abrasive rock.)

Other high-capacity, low-maintenance Lippmann-engineered equipment on this huge job includes five Screen-All Vibrating Screens with sharper sizing action . . . 12 Lippmann Belt Conveyors whose Life-Sealed Ball Bearing Idlers never require added lubrication . . . six sturdy Lippmann bins.

You, too, can profit by the experience of the country's leading contractors who choose Lippmann over all other makes. Lippmann engineering means higher capacity at lower cost . . . more efficient operation with less maintenance.

OTHER 36x48s PROVE REAL MONEY MAKERS

- Replacing a competitive unit, GRIZZLY KING balanced designed allowed an Indiana quarry to double its output with the rest of the equipment unchanged. Increased production will pay the entire crusher cost in two years.
- On a hard limestone job in Tennessee, balanced design of GRIZZLY KING has crushed 2,500,000 tons in two years without a single jaw die replacement.
- In a Canadian hard limestone quarry, GRIZZLY KING 36 x 48 produced half a million tons of minus 3½ in. stone in first six months' operation. Balanced design kept jaw dies "looking like new."

NOTE ABSENCE OF CATWALKS on these Lippmann Belt Conveyors in the Colorado quarry. That's because Life-Sealed Ball Bearing Idlers need no added lubrication or periodic alignment, a tremendous grease and labor saving.

LEW

FOR ALL THE FACTS on the complete Lippmann line for pits, mines and quarries write for: Grizzly King Jaw Crushers (Bulletin 1100), Screen-All Vibrating Screens (1200), Pulverizers (1160), Belt Conveyors (1400), Gyro-Gnome Secondary Crushers, Circuit Rider Self-Propelled Crushing Plants, Portable Washing Plants, Apron Feeders (1450).

LIPPMANN ENGINEERING WORKS

4603 West Mitchell St., Milwaukee 14, Wisconsin

Euclid Service - YOUR KEY TO LOWER COSTS!

Engineered and built for heavy off-the-highway hauling, "Eucs" are first choice for open pit mining and quarry operations, and for construction and industrial work. Proved on hundreds of the toughest jobs, Euclid low cost performance is backed by a world wide distributor organization with competent personnel and stocks of genuine Euclid parts.

Euclid owners know they can depend on prompt and efficient service whenever needed to keep down-time and maintenance costs at a minimum. Your Euclid distributor will be glad to show you how dependable performance and fast on-the-job service can help to lower your hauling costs and keep your work moving on schedule.

First in field performance—first in service . . . these are Euclid plus values that add up to customer satisfaction.

The EUCLID ROAD MACHINERY Co., Cleveland 17, Ohio

EUCLIDS

announcing

the CP Light Wagon Drill

Here's a new aid to faster drilling, the G-150 *Light* Wagon Drill. With it and the new 59-pound CP Sinker, or the 3-inch CP Drifter, you can increase footage in benching or toeholing up to 100% over hand-held methods. 6-foot steel changes materially increase actual throttle time.

A new, compact, cone gear drive—exclusive with CP—has 66% more tooth contact than conventional worm gearing. This design insures longer life because of greater load carrying capacity.

Holes are drilled easily at any angle. Positive, uniform feeding pressure insures faster unit drilling speed with lower air consumption per foot drilled. Powered steel puller avoids wrenching of steel and loss of holes in bad drilling ground.

Write for Bulletin SP-3010 giving specifications in detail.

CHICAGO PNEUMATIC TOOL COMPANY

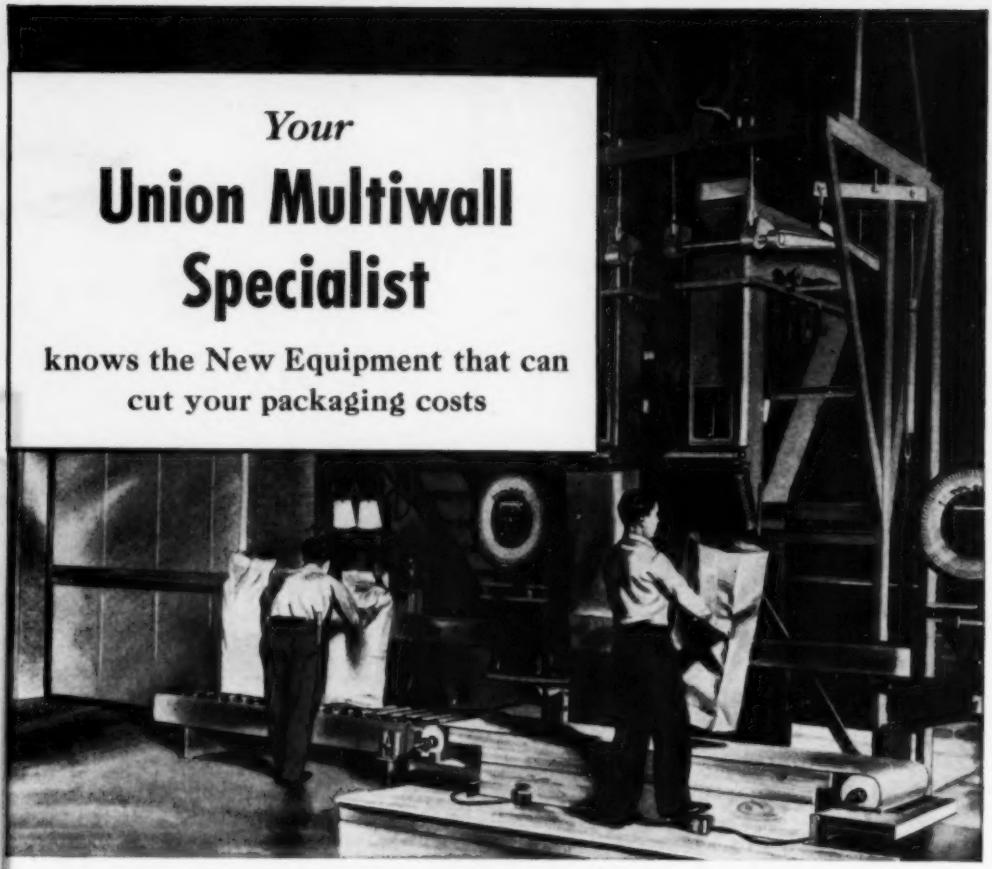
General Offices: 8 East 44th Street, New York 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

Your

Union Multiwall Specialist

knows the New Equipment that can cut your packaging costs



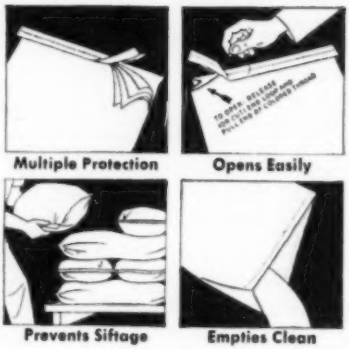
MULTIWALL bag packaging can be mechanized to a surprising degree. So if you are using pre-war packaging methods or equipment, your Union Multiwall Specialist can probably give you some money-saving ideas.

He will also show you how you can pare labor costs in handling packaging materials and in shipping.

Even if you are now packing your multiwall bags with the most modern equipment, the Union representative who calls on you can give you new ideas to build sales and hold down costs. For he is backed by skilled engineers and packaging experts of America's largest manufacturer of paper bags.

• • •

Let him show you how Union resources and packaging experience can work for you!



TRADE MARK UNION

UNION Multiwall Bags

UNION BAG & PAPER CORPORATION

233 BROADWAY, NEW YORK 7, NEW YORK

Offices in: CHICAGO, ILL. • NEW ORLEANS, LA. • MINNEAPOLIS, MINN. • KANSAS CITY, MO. • HOUSTON, TEXAS

WICKWIRE ROPE

A PRODUCT OF CF&I

Ask any user . . . you'll find them everywhere

In scores of industries, users of Wickwire Rope have developed an affectionate respect for its performance, safety and long life. And, for true economy, they use Wickwire's WISSCOLAY® *Preformed*. It lasts longer — is easier to cut, splice and install. It's kink-resistant and safer to handle. Wickwire Distributors and Rope Engineers, in key cities everywhere, are prepared to render prompt service in meeting your wire rope needs. Wickwire Rope Sales Office and Plant — Palmer, Mass.

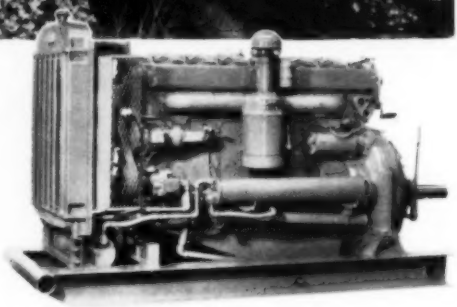
IN THE EAST — Wickwire Spencer Steel Div. of C. F. &I.
500 Fifth Ave., New York 18, N. Y.
IN THE ROCKIES — The Colorado Fuel and Iron Corp.
Commercial Oil Bldg., Denver, Colo.
ON THE WEST COAST — The California Wire Cloth Corp.
1010 — 79th Ave., Oakland 6, Cal.

means more output with MURPHY DIESELS

OWNERS everywhere find that the instantaneous response to load changes of Murphy Diesels means more output and more profit. Their easy starting, complete dependability and unequalled fuel economy, add to their popularity because of the boost they give to the profit side of the ledger. Here's what John S. Wenger of Wenger and Sensening, Paradise, Pa., has to say, *"The easy starting on cold mornings and the instant response of the governor to load changes are features we like particularly, while the dependability of the engines leaves nothing to be desired."*

Plan now to improve your profit picture by getting full details on Murphy Diesel Power from your Murphy Diesel Dealer or write direct.

MURPHY DIESEL COMPANY
5307 W. Burnham Street • Milwaukee 14, Wisconsin



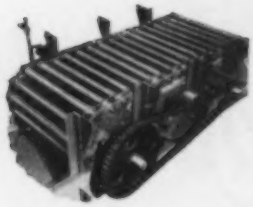
MURPHY DIESEL

Heavy duty power

for construction

Murphy Diesel Engines and Power Units for construction, 90 to 220 H.P. Generator Sets, 60 to 155 K.W.

ORO MANGANESE STEEL APRON FEEDERS. All wearing parts are Oro-Supermang Steel. Apron consists of Oro-Supermang double beaded, overlapping and interlocking pans with vertical side flanges. Pans cast integral with driving links.



TRAVELING GRIZZLY FEEDER. A heavy duty feeder, by-passes dirt or fines. Consists of a continuous track of 4" diameter tubular steel bars spaced 2½" apart. Driving mechanism with speed reduction. Clutch permits one man control.

Pays for itself every 6 months!

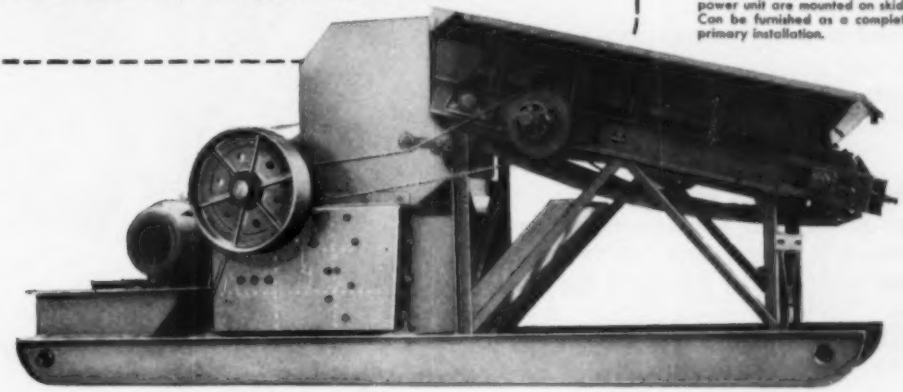
If you've ever pried a wedged rock or tried to clean out a choked crusher, you know how important a good feeder can be. "Most valuable piece of equipment in my plant . . . saves its cost twice a year . . . insures steady production" . . . that's the opinion of many experienced operators.

And they're right too. Without regulated feed, crushers are overloaded one minute . . . empty the next. Result—frequent clogging, idle trucks, lower production while a man with a manganese back cleans out the hopper or crusher.

You'll agree, we're sure, that a feeder can be *the most important single unit in many plants.* To fill your most exacting requirements, Pioneer builds three types of feeders for heavy work—Apron, Pioneer-Oro, and Traveling Grizzly—in many sizes. Just check the coupon below for complete details. PIONEER ENGINEERING WORKS, 1515 Central Avenue, Minneapolis 13, Minnesota.

APRON FEEDERS. ½" forged steel pans rigidly supported on wide rollers. Overlapping forged steel pans and sideboards provide a continuous path for material . . . reduce spillage.

Illustrated below is a 170 Series Plant. An apron feeder with flared sideboards, jaw crusher, and power unit are mounted on skids. Can be furnished as a complete primary installation.



BUY BOTH!

Higher Output, Lower Upkeep!

Pioneer

Continuflo **EQUIPMENT**

Mail coupon today! **Please send me more information on the following:**

☐ APRON FEEDERS	☐ BUZZER SCREENS (LIGHT DUTY)	☐ GRAVEL PLANTS
☐ ORO FEEDERS (HEAVY DUTY)	☐ VIBRATING SCREENS	☐ ROCK PLANTS
☐ TRAVELING GRIZZLY FEEDERS	☐ REVOLVING SCREENS	☐ WASHING PLANTS
☐ MECHANICAL FEEDERS	☐ ROLL CRUSHERS	☐ BITUMINOUS PLANTS
☐ CONTINUFLO CONVEYORS	☐ JAW CRUSHERS	☐ ROCK TOWERS

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Company_____

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Classifying ABRASIVE MATERIALS with

Special Raymond Separators are providing new concepts of operating and maintenance economy when handling highly abrasive materials.

●

With parts most subject to wear constructed of special abrasion resistant alloy castings, these separators are completely lined internally with replaceable liners for a maximum of trouble-free, long life.

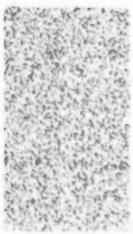
●

Present users of these separators tell us that their maintenance and repair expenses when classifying abrasive materials have hit a new low.

●

If your operations include classifying silica sand, flint, feldspar, or similar materials it will pay you, too, to investigate these special Raymond Separators.

RAYMOND DOUBLE WHIZZER SEPARATOR
CUTAWAY VIEW
Showing standard construction for long and satisfactory service handling normally abrasive materials.



TYPES AND SIZES

Raymond Mechanical Air Separators are made with either a Single or Double Whizzer, and in a commercial range of sizes from 4'0" to 18'0" diameter; also a 30-Inch Separator and a 10-Inch Laboratory Separator.

COMBUSTION ENGINEERING
RAYMOND PULVERIZER DIVISION
1321 North Branch Street **Chicago 22, Illinois**

...RAYMOND WHIZZER SEPARATORS

RAYMOND SINGLE WHIZZER SEPARATOR
CUTAWAY VIEW
Showing special construction for classifying abrasive materials. Used for medium fineness separation and for dedusting operations.

IF YOU HAVE A PROBLEM

involving the classification of dry materials either with or without grinding, write us about it in detail. Our engineers will be glad to recommend the proper equipment for your job.

TYPICAL PRODUCTS handled on RAYMOND AIR SEPARATORS

SILICA SAND*
SILICATE MATERIALS*
CEMENT CLINKER
CEMENT RAW MIX
HYDRATED LIME
BURNT LIME
GYPSUM
FLINT*
FELDSPAR*
QUARTZ*

* Indicates materials for which special construction is recommended.

—SUPERHEATER, INC.

Western Offices: San Fernando Bldg., Los Angeles 13
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SINCE 1887

IT COSTS *LESS* TO OWN THE BEST!

No. 36
GEARLESS
PRIMARY CRUSHER

●

SYNCHRONOUS MOTOR BUILT INTO PULLEY ASSEMBLY

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NO GEARS TO WASTE POWER

●

POWER APPLIED ONLY FOR CRUSHING

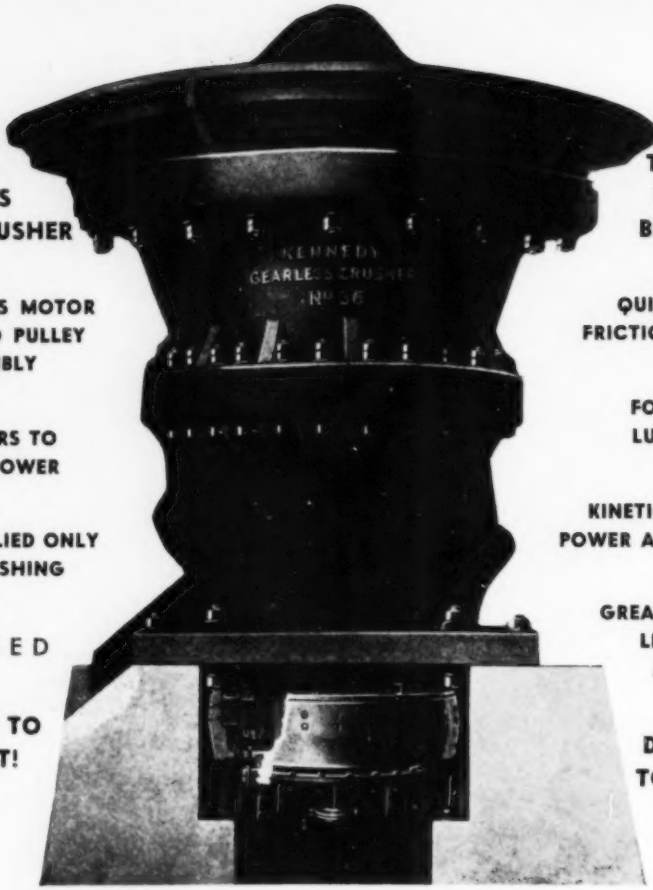
●

RUGGED

●

BUILT TO LAST!

●



TYPE "S" ROLLER BEARINGS

●

QUIET, SMOOTH FRICTIONLESS ACTION

●

FORCED FEED LUBRICATION

●

KINETIC ENERGY ADDS POWER AT NO EXTRA COST

●

GREATER CAPACITY LESS POWER ALL SIZES

●

DESIGNED TO CRUSH!

●

A primary crusher of great capacity, designed to produce maximum loads of uniform products. Rugged construction assures freedom from "time off for repair." Cuts down maintenance costs, increases output, delivers more rock tonnage, faster and at lower cost.

KVS crushers are built in sizes from 12 to 3600 ton per hour capacities. 250% starting torque and 300% pull out torque permit starting of fully loaded crusher. Low power consumption assures economical operation; elimination of gears, belts and countershafts overcome frictional losses, increase efficiency.

Send for bulletin describing KVS crushers

KENNEDY-VAN SAUN MFG. & ENG. CORPORATION

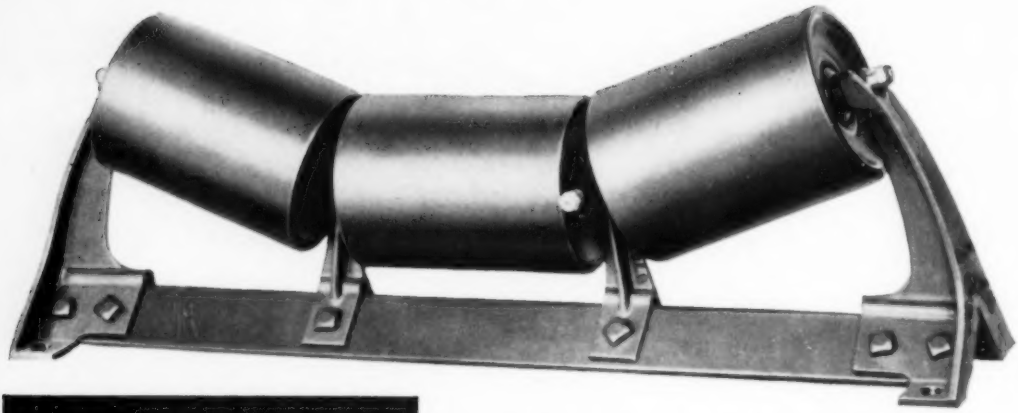
TWO PARK AVENUE, NEW YORK 16, N. Y.

Your Trucks Deliver More—for Less with EATON 2-Speed Truck AXLES

Eaton 2-Speed Axles give you both pulling power and speed in the same vehicle—instantly available to meet every specific operating need. Your trucks do more jobs, make faster trips. With Eaton 2-Speed Axles, engines run at most efficient and economical speeds; operating and upkeep costs are reduced to a minimum; thousands of miles are added to vehicle life. And Eaton's planetary design adds thousands of miles to *axle* life. Gear tooth loads are better distributed; gear speeds are slower; stress and wear are reduced to a minimum. Eaton 2-Speed Axles are available for most trucks of the 1½-ton class and larger. Ask your truck dealer for a road demonstration.

Axle Division
EATON MANUFACTURING COMPANY
CLEVELAND, OHIO

PRODUCTS: SODIUM COOLED, POPPET, AND FREE VALVES • TAPPETS • HYDRAULIC VALVE LIFTERS • VALVE SEAT INSERTS • ROTOR PUMPS • MOTOR TRUCK AXLES • PERMANENT MOLD GRAY IRON CASTINGS • HEATER-DEFROSTER UNITS • SNAP RINGS • SPRINGTITES SPRING WASHERS • COLD DRAWN STEEL • STAMPINGS • LEAF AND COIL SPRINGS • DYNAMATIC DRIVES, BRAKES, DYNAMOMETERS



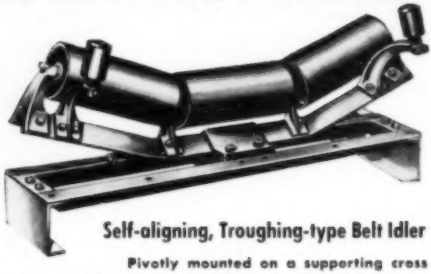
GIVE IT A RIDE— ON JEFFREY BELT IDLERS

Costs must be cut. No question about that . . . and no question about the economy of Jeffrey Belt Conveyors when small or large quantities of material must be handled. We can furnish them by the rod, or mile, just as the job requires. We know how to provide for reliability under tough conditions, handling of peak loads, low investment, high salvage and other things which are problems peculiar to engineering.

Hence, we say, "Give That Material A Ride on Jeffrey Idlers." They are the backbone of the belt conveyor . . . have been the choice of smart operators on thousands of jobs. They are built to take day-after-day punishment . . . have that reserve strength and durability that count for many years of satisfactory, efficient trouble-free service.

Whether yardage looms large in the estimate, or small capacity is desired, Jeffrey engineers are skilled in the application of material handling to most any job. We would like to talk things over—constructively.

Catalog No. 785 Tells All



Self-aligning, Troughing-type Belt Idler

Pivotly mounted on a supporting cross member, guide rollers are mounted on arms and extend at right angles to idler. Need only to be spaced about 20 to 50 feet apart to keep belt in perfect alignment. Will not damage belt.

Pivoted-type Return Idler

Used for both troughing and flat belt conveyors. Of the self-aligning, two-pulley type. Also standard return rolls pivotly mounted in ball bearings on supporting cross member. Write for full details about Jeffrey Idlers for either troughing or flat belt service.

THE JEFFREY MANUFACTURING COMPANY Established 1877

917 North Fourth St., Columbus 16, Ohio

Complete Line of Material Handling, Processing and Mining Equipment

JM

Baltimore 2	Chicago 1	Detroit 13	Jacksonville 2	Pittsburgh 22
Birmingham 3	Cincinnati 2	Harlan	Milwaukee 2	St. Louis 1
Boston 16	Cleveland 13	Houston 5	New York 7	Salt Lake City 1
Buffalo 2	Denver 2	Huntington 19	Philadelphia 3	Scranton 3

Jeffrey Mfg. Co., Ltd., Head Office & Works: Montreal

Here's FASTER, LOWER-COST BLAST HOLE DRILLING!

The New JOY 58-BH ROTARY DRILL

The faster drilling speeds of the new JOY 58-BH Rotary Blast Hole Drill give you *more* footage daily—*5 to 6 times as much as from conventional methods of drilling.* Rugged and self-propelled, with either diesel, gasoline or electric drive, the 58-BH has ample weight to push roller-cone rotary bits through hardest dolomite limestone, and at lower overall cost per foot. It can drill up to 7⅞" holes to a depth of 300'—smooth-wall, straight holes that make blasting more efficient and eminently safer. Fast set-up with hydraulic leveling. ● The 58-BH is now available for either wet or dry drilling . . . let us quote on your requirements.

Write for Bulletin or *Consult a Joy Engineer*

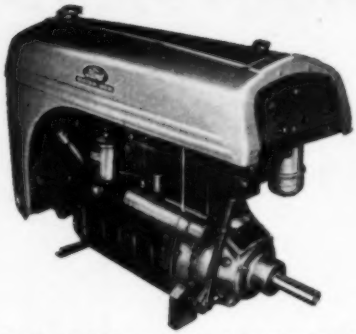
JOY MANUFACTURING COMPANY

GENERAL OFFICES: HENRY W. OLIVER BUILDING · PITTSBURGH 22, PA.

IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LIMITED, GALT, ONTARIO

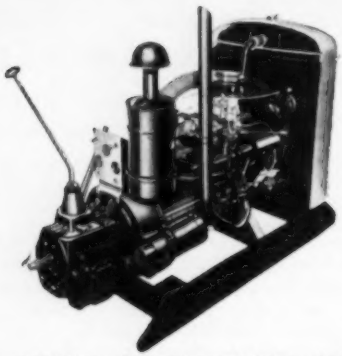
IT'S HERE...

NEW Ford "120" POWER UNIT



Removable dry cylinder liners . . . 3-ring pistons, chrome top ring . . . Moly-chrome valve seat inserts . . . Circulating cooling system with thermostat . . . Replaceable thin shell main and connecting rod bearings . . . Counterbalanced crankshaft . . . Magneto or battery ignition . . . Oil filter . . . Heavy duty oil bath air cleaner.

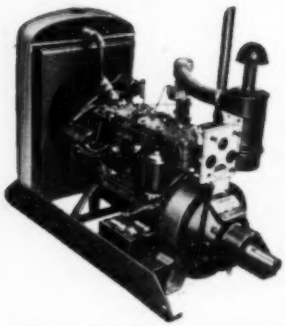
NEW Ford "226" POWER UNIT



Pad mounted oil filter . . . Full length water jacketing . . . Recirculating pressure cooling system with thermostat . . . Counterbalanced crankshaft . . . Heavy duty, replaceable thin shell copper lead bearings . . . High lift camshaft . . . Balanced carburetion (downdraft or updraft) . . . Heavy duty oil bath air cleaner.

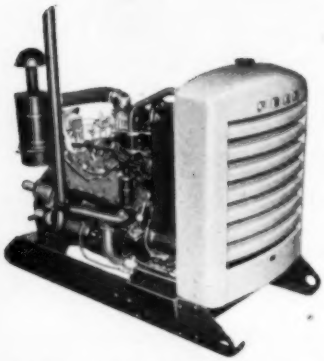
Complete

NEW Ford "254" POWER UNIT



Pad mounted oil filter . . . Recirculating pressure cooling system with thermostat . . . Autothermic pistons with chrome top compression ring . . . High lift camshaft . . . Hard faced cobalt exhaust valve (free type valves) . . . Counterbalanced crankshaft . . . Heavy duty, replaceable thin shell copper lead bearings . . . Balanced carburetion (downdraft or updraft) . . . Air cleaner.

NEW Ford "239" POWER UNIT



Dual water pumps . . . Full length water jacketing *plus* . . . Recirculating pressure cooling system with thermostat . . . Fully counterbalanced crankshaft . . . Replaceable thin shell bearings . . . Moly-chrome valve seat inserts . . . Dual downdraft carburetion . . . Oil filter and air cleaner.

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Model	Cylinders	Bore and Stroke	Displ. cu. in.	Dyn. B.H.P.	Max. Torque	Equipment Available
120	4	3⅛ x 3¾	120	38 @ 2400	92# @ 1600	Clutch; SAE #5 housing; power take-off; Ford housing; 3- or 4-speed transmission; governor. (Available as closed type power unit or engine assembly.)
226	6	3.3 x 4.4	226	80 @ 2400	182# @ 1200	Clutch; SAE #3 or #4 housing; power take-off; Ford housing; 3-, 4- or 5-speed transmission; governor. (Available as closed or open type power unit, or engine assembly.)
239	V-8	3⅛ x 3¾	239	85 @ 2400	187# @ 1600	Clutch; SAE #3 or #4 housing; power take-off; Ford housing with 3-, 4- or 5-speed transmission; governor. (Available as closed or open type power unit, or engine assembly.)
254	6	3.5 x 4.4	254	95 @ 2400	212# @ 1200	Clutch; SAE #3 or #4 housing; power take-off; Ford housing; 3-, 4- or 5-speed transmission; governor. (Available as closed or open type power unit, or engine assembly.)
337	V-8	3½ x 4½	337	117 @ 2400	257# @ 1600	Clutch; 5-speed direct-in-fifth transmission; overdrive transmission, direct drive power take-off. (Available as closed or open type power unit, or engine assembly.)

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3. **RIGHT SERVICE**—as near as your nearest Ford Dealer, clear around the world.

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POWER UNITS!

NEW Ford "337" POWER UNIT

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YOUR JOB IS WELL-POWERED WHEN IT'S FORD-POWERED

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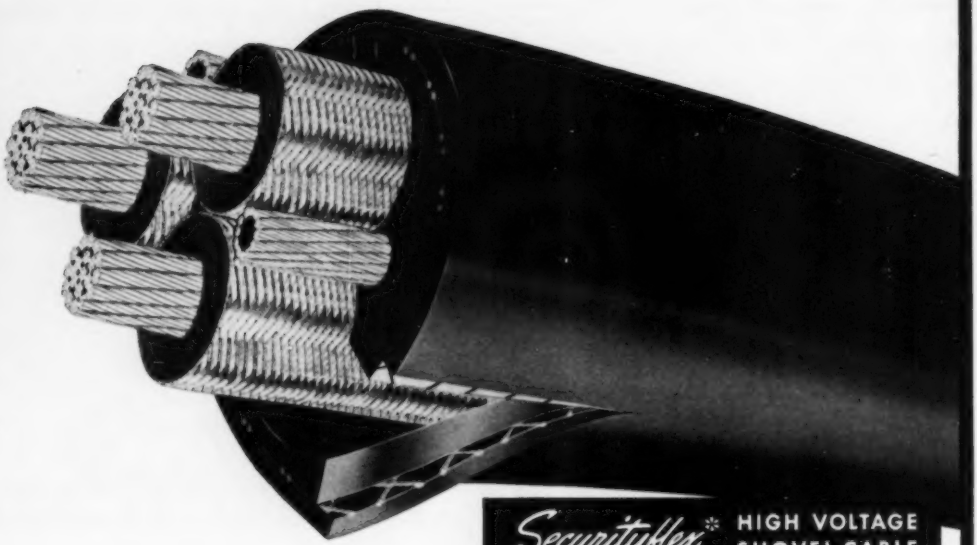

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BUILT-IN EITHER
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TRIPLE
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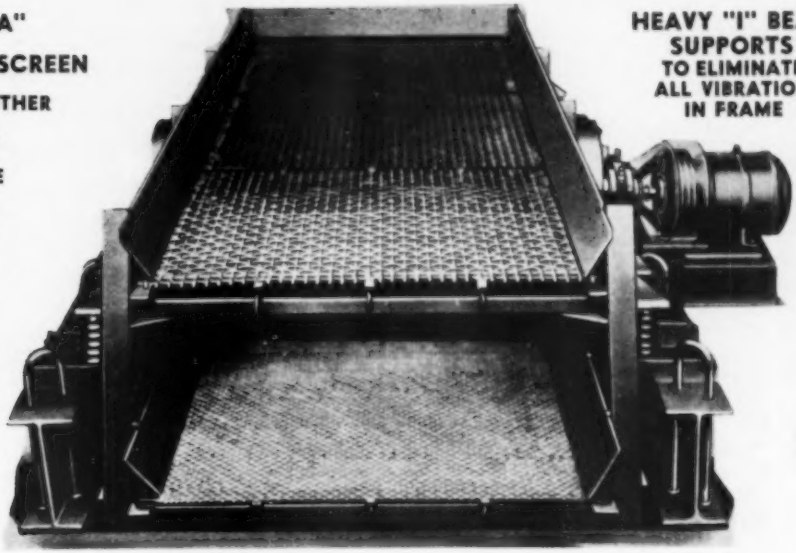

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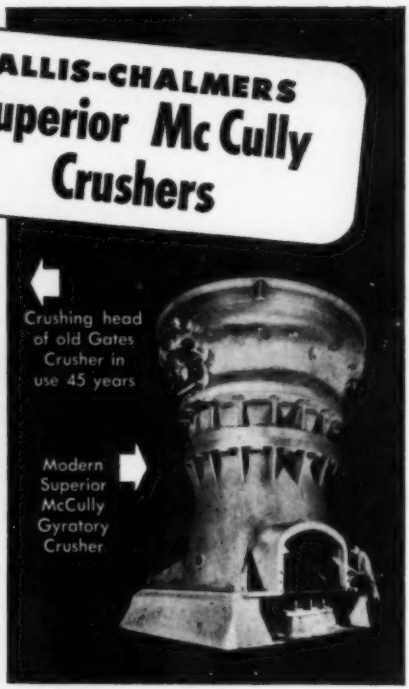
ALLIS-CHALMERS
Superior Mc Cully Crushers



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THAT'S THE RECORD of this 7½ K Gates crusher still going strong 16 hours a day at Southern State Portland Cement Co., Rockmart, Ga.

As a secondary breaker it reduces 100 to 125 TPH of limestone to an approximately 2-inch product.

The Gates crusher was the first of the gyratory type crushers, originated by Allis-Chalmers in 1878. Today Allis-Chalmers offers you the *modern* equivalent — *the Superior McCully crusher line,* in sizes with 8-inch to 60-inch receiving openings.

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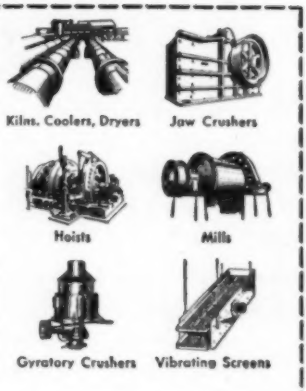
OTHER IMPORTANT FEATURES:

- **Shaft strength is increased 60% over standard long shaft gyratories.**
- **Area of eccentric bearing is 100% larger than in long shaft machines.**
- **Automatic, self-reversing oil pump can be built integral with crusher.**
- **Improved type dust seal excludes dirt from eccentric bearing.**

Send today for new Superior McCully crusher **Bulletin 07B6004B.** Or contact the Allis-Chalmers representative in your area for more facts. A-C offices or distributors are in principal cities in the U.S.A. and throughout the world.



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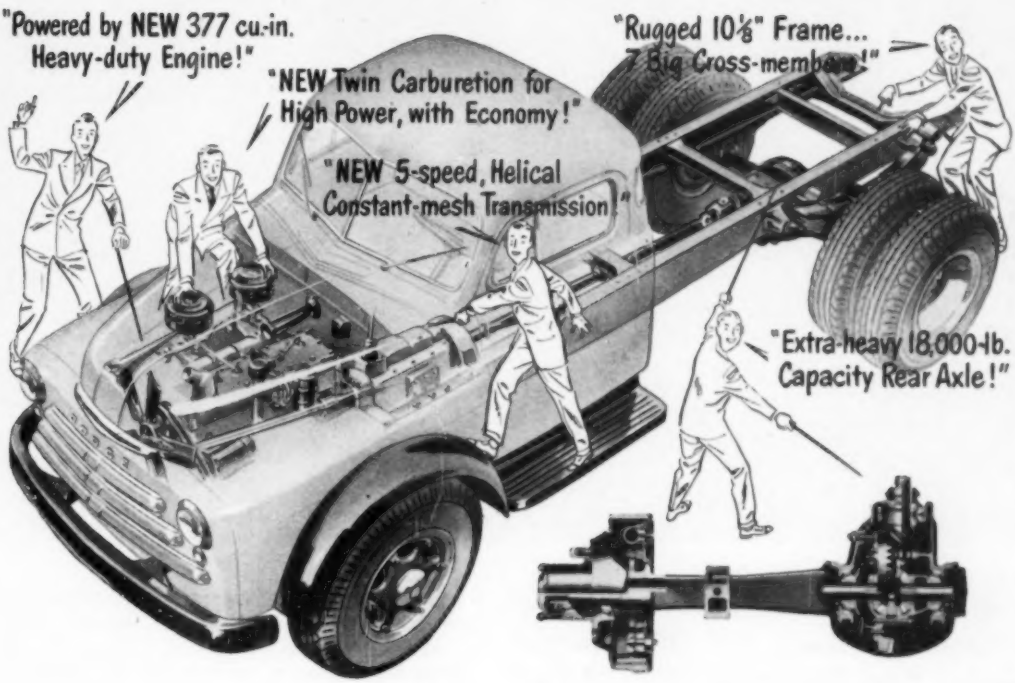
New Heavy-Duty 4-TON DODGE "Job-Rated" TRUCKS


"Powered by NEW 377 cu.-in. Heavy-duty Engine!"
"NEW Twin Carburetion for High Power, with Economy!"
"NEW 5-speed, Helical Constant-mesh Transmission!"
"Rugged 10⅛" Frame... 7 Big Cross-members!"
"Extra-heavy 18,000-lb. Capacity Rear Axle!"

There's a new champion in the HEAVY-DUTY truck field. It's the new Dodge truck rated at 28,000 pounds G.V.W. . . . 50,000 pounds G.C.W.!

Ample "*Job-Rated*" POWER flows from one of the finest-performing, and most economical truck engines ever designed. It develops 154 gross horsepower, and 330 pound-feet gross torque.

This remarkable engine contains such advanced long-life features as Silchrome intake valves and inserts. Exhaust valves are Stellite-faced and sodium-filled to resist warping, wear longer.

Hydraulic lifters insure perfect valve operation. Rustproof water distributor tube provides maximum valve seat cooling, and lengthens engine life. High power output and economy result from two downdraft carburetors. Features are numerous: Dual intake manifold; dual exhaust system; high anti-vapor-lock pump; ceramic fuel filters; velocity-type governors; oil-bath air cleaners, and many others.

This "*Job-Rated*" load lugger has a new and rugged constant-mesh, 5-speed helical transmission, direct-in-fifth, with an extremely high torque input. A 5-speed overdrive transmission is available.

This 4-tonner has a rugged 10⅛-inch frame, with 7 and 8 big crossmembers; extra-heavy 18,000- and 22,000-pound capacity rear axles, and many other HEAVY-DUTY features you'll want to study and compare.

If your transportation requirements fall in the 28,000-pound G.V.W. range (up to 50,000 pounds G.C.W.), we believe you'll find this 4-ton heavyweight your long-awaited answer to . . . *lower cost hauling!*

See your Dodge dealer at your earliest convenience.

For low-cost transportation...switch to

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8 Why
Model
HD-10
86.63 drawbar hp.
Six speeds forward, to 6.03 m.p.h.; two reverse, to 4.15. Weight: 62" tread, 21,000 lbs.; 74" tread, 21,600 lbs. Available with large idler.

Let the Outstanding Advantages of These AHEAD-OF-THE-TIME Tractors Boost Your Production and Cut Your Costs...as They Have for Thousands of Owners

1 **1,000-HOUR LUBRICATION** of truck wheels, support rollers and idlers. You operate six months on a 40-hour week basis with just *one lubrication* . . . instead of daily, or even weekly, attention. Think what this means in labor and lubricant savings . . . and in working time gained! Think of the safety factor, too—no costly damage by greasing neglect.

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3 **INTERCHANGEABLE ENGINE PARTS** Nearly all of the GM engine wearing parts are interchangeable with each of the GM engines on the various models of A-C tractors and motor graders—no matter the size. Lowers parts investment, simplifies maintenance for Allis-Chalmers fleet owners.

4 **INSTANT STARTING** GM 2-cycle diesel engines start as easily as your automobile . . . and they *start* and *operate* on *diesel fuel*. No need to let 'em idle during work-stop periods — no unnecessary engine wear or fuel waste.

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Big Reasons

they're so popular

Model

HD-7

60.10 drawbar hp.
Four speeds forward, to 5.00 m.p.h.; reverse to 1.89. Weight: 52" tread, 13,830 lbs.; 63" tread, 14,000 lbs. Available with large idler.

5 **FAST MANEUVERING** 2-cycle diesel tractors are well known for their fast-working ability — not only for quickly traveling from cut to fill, but for turning around instantly in their tracks . . . and for easy maneuvering in and around tight places — especially important on bulldozing. Time saved is money made!

6 **PROPER BALANCE** Weight, speed and power are positively balanced in A-C tractors, assuring top performance on every job — pulling, pushing, lifting.

7 **OPERATOR COMFORT** All these advantages mean operator satisfaction, too — resulting in more work done more easily. Besides — he has a big, wide, comfortable seat, cushioned back, arm rests, roomy platform, convenient controls, good vision.

8 **MATCHED ALLIED EQUIPMENT** Each Allied manufacturer, skilled in his own field, works in complete cooperation with Allis-Chalmers in designing and building auxiliary equipment.

ALLIS-CHALMERS

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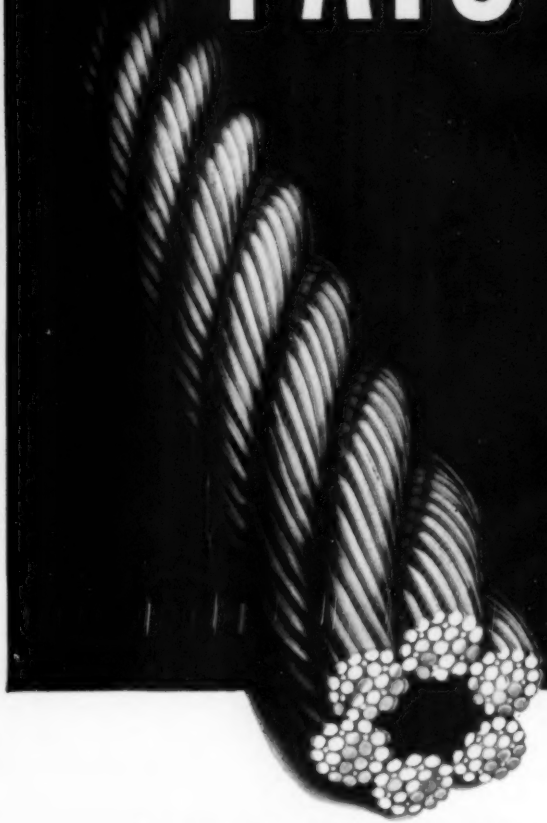
Originator of the Torque Converter Tractor

TURN TO PERFORMANCE THAT

PAYS OFF



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"Blue Center"
Wire Rope

PROVEN ECONOMY IN QUARRIES

YOU SAVE TWO WAYS with Roebling Preformed "Blue Center" Wire Rope. *First*, you save because "Blue Center" Steel—an exclusive Roebling development—gives rope extra toughness, extra stamina to resist shock, and longer service life.

Second, you save because Roebling Preforming provides a rope that's easier to handle and install . . . that performs better on the job. It practically abolishes vibration and whipping . . . improves winding . . . is much less inclined to develop sets and kinks.

Roebling wire rope is one of the most widely used products in industry today. Whatever your requirements, there's a type and size for real efficiency and minimum expense.

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Vol. 42 JANUARY 1950 No. 7

PIT AND QUARRY

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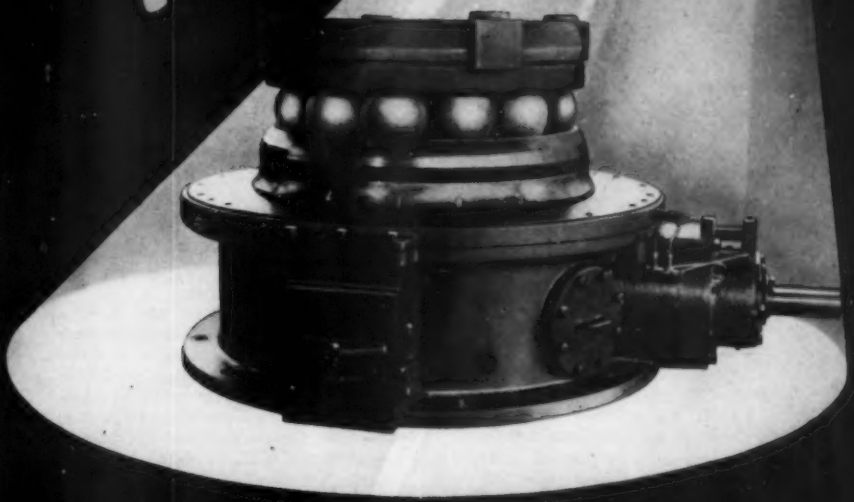
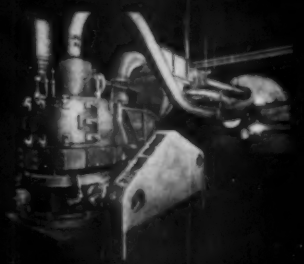


BECAUSE OF CONSISTENTLY UNIFORM FINENESS



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editorial

Review and Forecasts

THIS issue of PIT AND QUARRY, January, 1950, is the 34th Annual Review and Forecast Number, and for it we have assembled the latest and best information available on the status of the nonmetallic minerals industries in 1949 and their prospects for 1950. While complete and official reports on 1949 production, shipments, prices, etc., for most of these industries will not be available for some months to come, enough information is on hand to give a fairly accurate picture of conditions. We have combined the partial official government or industry information on hand with our own direct information and the answers to a questionnaire sent to many hundreds of producers in all parts of the country. We believe that the articles in this issue which are based on this information give an accurate picture of conditions in 1949 and the prospects for 1950.

Review Our information shows that the nonmetallic minerals industries as a whole (exclusive of fuels) had the biggest year in their history in 1949, in contrast with the minerals industries as a whole, which fell off about 11 percent to a total value of about 13.9 billion dollars, the second highest value in history. The production and shipments of portland cement both set new records for the third consecutive year. Production soared to about 210,000,000 bbls., about 2 percent over the 1948 record. Shipments were about 213,000,000 bbls., about 4 percent over 1948. Value showed an even greater gain due to price increases during the year.

The information on aggregates production is probably less accurate but it seems that new production and value records were also set. Sand and gravel output in 1949 is estimated at about 326,000,000 tons, about 2 percent up from 1948. Both commercial and non-commercial production are included. The total production of crushed stone (including both commercial and non-commercial but excluding that used for cement and lime manufacture) totaled about 235,000,000 tons, up about 5 percent from the 1948 record.

The above industries were largely responsible for holding the entire nonmetallic minerals field (exclusive of fuels) above 1948 levels, as most of the other industries fell off in volume. The total value of all production, due to general but moderate price increases in most of these industries, was undoubtedly considerably over the 1948 figure for another new record.

Forecasts The prospects for 1950 are very encouraging, if all the available indicators can be believed. It seems certain that the volume of production of nonmetallic minerals (other than fuels) will equal or even exceed that of 1949. The value of production will also be near the 1949 level. Accurate estimates are, of course, impossible, but estimates made in previous years and based on even less complete information have proved to be remarkably accurate.

Construction volume in 1949 should about equal 1948, according to all indices and to the many authorities who contributed their viewpoints to a feature article in this issue. This alone insures continued high demand for the aggregates and cement industries. Business and manufacture in general are expected to continue near their present high levels or improve, and the outlook for agriculture is good. On the strength of the information available it seems certain that the total demand for nonmetallic minerals (other than fuels) will stay near the present level in 1950 and some industries may set new records.

Security

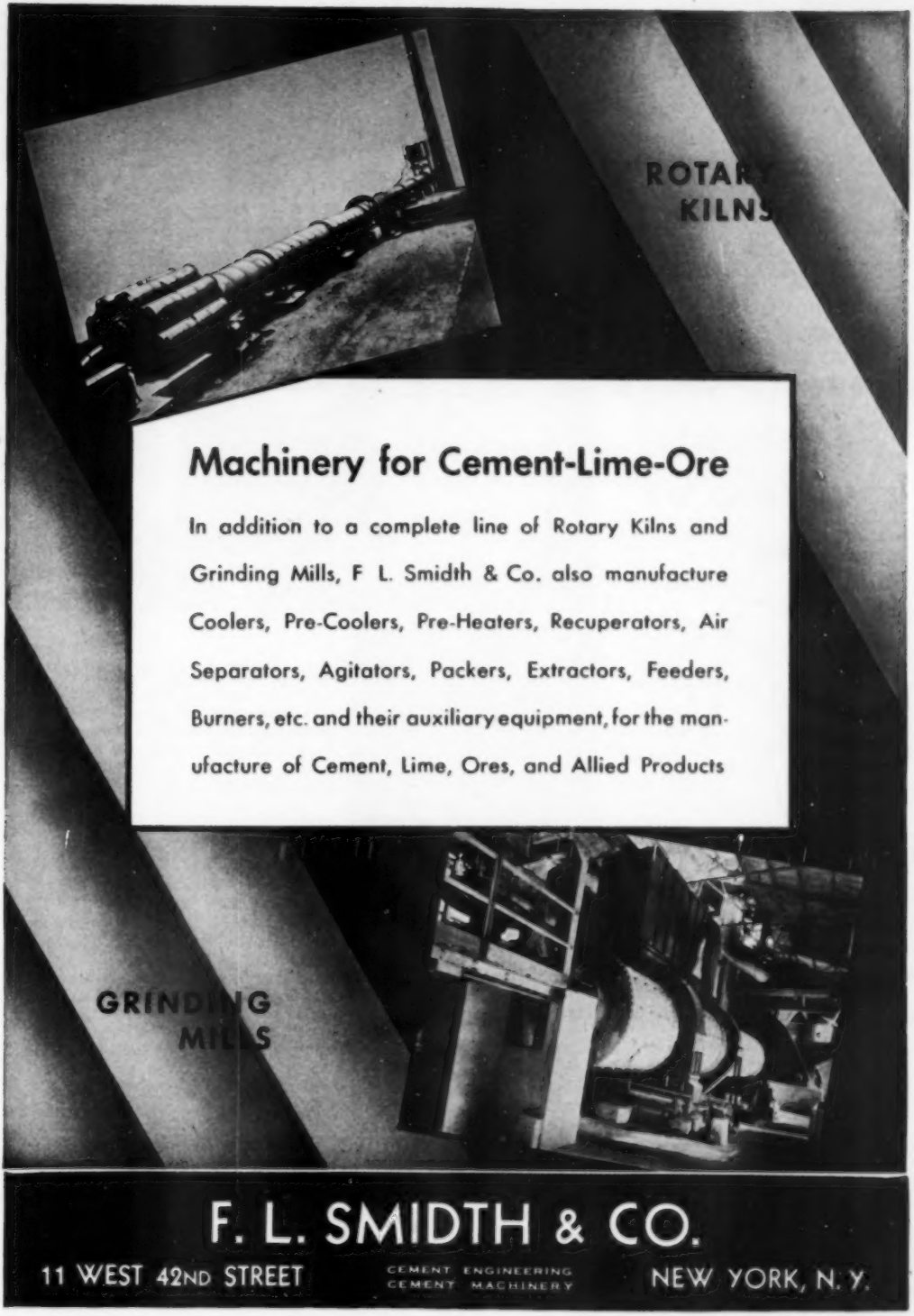
IT becomes more and more obvious that the ultimate aim of all labor unions is to obtain security for all labor union members. What is more, it now seems certain that they will get it. At present the union definition of security seems to be $100 a month minimum pensions for all union workers. The Bethlehem agreement provides for $100-a-month minimum pensions for employees with 25 years of service at age 65, entirely paid for by the company but with Social Security payments deductible from the minimum. Most of the other large steel companies have gone along with this demand. The Ford agreement sets a maximum payment of $100 per month, payable at age 65, after 30 years' service. The coal industry, of course, has its own variation, and more recent signers of such contracts have included fire brick manufacturers in Middle Western states.

Secretary of Labor Maurice J. Tobin recently stated that all retired persons should get $100 a month immediately. In a speech before a labor group he said: "A sound insurance system should be enacted immediately which would give a minimum of $100 a month for any retired person in the United States." The law, he said, should include farmers, domestics, and the self employed.

This all raises the question whether or not the government should take over all pension plans, private, industrial, etc. Unsound as this might seem, it would solve many gross inequalities which now exist and which are becoming more pronounced. At present the only persons who can look forward to receiving pensions are those working for government agencies (federal, state, county, city, etc.), those working for companies (mostly large corporations) having such plans, and more recently those who are members of favored unions. The last-mentioned group will soon include all union members.

If the government does not enter into the picture with some form of pension or further expanded Social Security benefits the very large percentage of workers not coming under, and not likely to come under, any of the above three classifications will have only Social Security benefits to look forward to and must depend largely on their own savings (if any) or on doles to support them in their old age. The favored workers will look forward to comparatively large retirement incomes of which they pay only a part. The balance of their pensions is paid for by all other taxpayers, by all who have incomes and spend money. Such inequalities cannot long exist.

Walter E. Trampler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news of the industry

PIT AND QUARRY

N.L.A. Directors, Officers Discuss Policies, Research At Ponte Vedra Session

The board of directors and the executive committee of the National Lime Association met at the Ponte Vedra Club, Ponte Vedra Beach, Fla., on November 8 and 9, 1949. This was the first time that the N.L.A. has held a meeting at this oceanside resort, and it is anticipated that the board meeting next fall will also be held there, since everyone was most favorably impressed with Ponte Vedra. As usual, quite a few wives accompanied their husbands on this trip.

Louis N. Carmouche, plant manager of The Dow Chemical Company, Ludington, Mich., and a director of the National Lime Association, was unanimously selected as the new chairman of the N.L.A. operating division, succeeding Fred Witmer, president of The Ohio Hydrate & Supply Company. Plans were discussed for the next operating meeting, which has been tentatively scheduled for Bellefonte, Pa., early next fall.

Percentage depletion was discussed, and the association plans to continue vigorously its program to secure 15 percent percentage depletion for "limestone when used or calcined for chemical or metallurgical purposes", after Congress reconvenes at the first of the year. H. D. Brigstocke, vice-president of the Thomasville Lime and Stone Company, continues as chairman of this committee.

The board approved expanding the association's present research fellowship at Purdue University on lime stabilization. The additional appropriation will be used to conduct a literature survey covering the chemical aspects of lime-soil mixtures. Simultaneously Purdue will investigate the durability of lime-soil mixes through wetting and drying and freezing and thawing tests. New research projects for the future were also discussed.

W. W. Sprague, chairman of the agricultural research committee, reported on the N.L.A.-sponsored agricultural conference which was held at Cornell University last summer in early July. The joint answers to 100 questions on liming by the five participating colleges under this fellowship have progressed satisfactorily, and are expected to culminate in a booklet authored by five agricultural experiment stations at the conclusion of this fellowship next year.

Other subjects discussed included the desirability of the National Lime Association's sponsorship of an international lime conference in order to discover the latest foreign research on lime and new production techniques and the program for the spring convention.

Coming Events

January 15-19, 1950 — Chicago. 31st annual meeting, Associated Equipment Distributors, Stevens Hotel.

January 18, 19, 1950—Washington. Fifth annual convention, National Agricultural Limestone Association, Inc., Hotel Statler.

January 23-27, 1950 — Chicago. 34th annual convention and exhibit, National Sand and Gravel Association, Stevens Hotel.

January 23-27, 1950 — Chicago. 20th annual convention and exhibit, National Ready Mixed Concrete Association, Stevens Hotel.

January 30- February 1, 1950 — Chicago. 33rd annual convention, National Crushed Stone Association and Manufacturers Division Exposition, Stevens Hotel.

February 1-3, 1950—Chicago. 5th annual convention, Agricultural Limestone Institute, Stevens Hotel.

February 6-9, 1950—Chicago. 30th annual meeting, National Concrete Masonry Association, Hotel Sherman.

February 12-16, 1950—New York. Annual meeting, American Institute of Mining and Metallurgical Engineers, Statler Hotel.

February 22-25, 1950—San Francisco. 42nd annual convention, American Concrete Pipe Association, Hotel Fairmont.

March 6-9, 1950—Cincinnati. 47th annual meeting, American Road Builders' Association, Netherlands Plaza Hotel.

Trinity Portland Cement At Dallas to Hike Output By 1,250,000 Bbls. Annually

According to an announcement released by James F. Hayden, vice-president of the Trinity Portland Cement Company at Dallas, Tex., capacity of the plant will be increased by 1,250,000 bbls. of cement per year by the addition of new equipment.

The official announced the purchase of a new kiln, grinding equipment and other machinery, authorized by the directors of General Portland Cement Company, of which Trinity is a division.

Foundations for the addition to house the new equipment will be laid in the near future, stated C. E. Caron, plant superintendent. He added that this new structure, which will be comparable in size to a major cement plant, will go into production before next summer.

Trinity operates two other plants in Texas, one at Fort Worth and a second at Houston.

Certain-teed Products Corp. To Build Plant at Ft. Dodge

Rawson G. Lizars, president of Certain-teed Products Corporation, has announced that the corporation has awarded a cost plus a fixed fee contract to the Turner Construction Company to construct the buildings for a new board plant at Fort Dodge, Ia.

Plans call for the erection of five connected buildings, one story high, under one roof. The buildings will have a structural steel frame, corrugated metal siding and gypsum roof deck, and will cover a total of 100,170 sq. ft. Completion is scheduled for June, 1950.

International Talc Installs Grinding Unit at Hailesboro

Installation of a new 100-ton grinding unit at the No. 6 mill of the International Talc Company, Hailesboro, N. Y., will bring the maximum capacity of the plant, depending on the grade of ore being handled, up to 275 tons a day.

International is rebuilding a part of a storehouse to accommodate the new unit, and will add another story to bring the whole up to a level with the rest of the building.

Cement Industry Loses Valued Member in Passing Of Thomas A. Hicks

On December 26, 1949, Thomas A. Hicks, nationally known as an outstanding chemist in American cement manufacturing industry for 50 years, died at a hospital in Sandusky, O., after an illness of several months. He was at

Thomas A. Hicks

the time of his retirement in 1943 general chemist of the Universal Atlas Cement Company.

Mr. Hicks, who was educated at the Case School of Applied Science in Cleveland, began his business career in 1897, when he was appointed chief chemist for the Art Portland Cement Company at Ransoms, near Sandusky. In 1900 he became chief chemist of the Whitehall Portland Cement Company at Cementon, Pa., and four years later he joined the Atlas Portland Cement Company in the same capacity at its Northampton, Pa., plant. In 1916 he was named general chemist for the Atlas company, and in 1930 for the Universal Atlas Cement Company.

Among his special assignments with Universal Atlas were his investigations on the development of Atlas White and Atlas Lumnite cements and his association with the original manufacture of Unaflo oil-well cements, Atlas high-early strength cement, and similar cements.

Mr. Hicks assisted in the progress and development of several of the company's plants, including the original operations at some of them, as well as the prospecting in 1909 at the Hudson, N. Y., plant, where he also installed the first Hudson laboratory at the old mill. Later he equipped and assisted in the designing of the modern laboratories at Waco, Tex., Leeds, Ala., Hudson, N. Y., and Northampton, Pa.

He was a member of the American Society for Testing Materials, serving on its Committee C-1 since 1914 and on its gypsum committee since its inception. On March 4, 1944, he was appointed an honorary member of Committee C-1.

Major Cement Firms Make Good Showing During 1949

Calaveras Cement Company reported sales of $3,546,746 for the first nine months of 1949, as compared with $3,169,449 for the same period in 1948. Consolidated Cement Corporation of Chicago had a net income of $468,600 ($4.69 per share) for the January-September period of 1949, against $467,700 ($4.68 per share) in the 1948 nine-month period; net sales in 1949 were $3,370,100, while the 1948 figure was $3,187,400.

Lawrence Portland Cement Company (New York) declared a total of $1.25 per share in dividends. Total net earnings were $281,250 for the year.

Lehigh Portland Cement Company (Allentown, Pa.) records showed a net profit of $6,427,201 for the year ended September 30; the previous year's net profit was $5,093,571.

New Loading Station Built At Iola as Storage Shrinks

Space limitations at the Independence, Kan., plant of the Universal Atlas Cement Company resulted in the construction of a bulk-loading station near the Santa Fe tracks. The rapidly decreasing storage space at the plant threatened to cause a serious problem when cement had to be shipped by truck during a recent Missouri Pacific Railroad strike. Shipments moved too slowly to keep up with production, and shrinking space for the stock-piles made it imperative to provide new storage facilities.

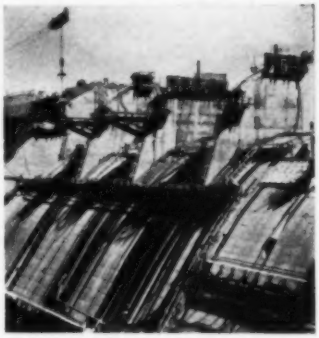
According to Paul Kirkbride, plant superintendent, the big back-log will be shipped out as rapidly as possible by means of the new facilities, in order to free storage space for the winter's production. Construction of the loading station, said Mr. Kirkbride, halted temporary layoffs, due to the necessity of slowing production, and precluded the possibility of a shutdown.

Marquette Men Shoot It Out With "Biggest Yet" Kiln Ring

There was a lot of shooting at Marquette's Oglesby plant some weeks ago, with Superintendent Ralph Moyle and Master Mechanic Jack Tauscher at the gun. They took turns, firing more than 2,000 shots—all 3-ounce slugs—before they brought down their prey. It was the 30-ft. clinker ring in a kiln at the Number Two plant, which was too far back to be cracked with a water bar.

Had it been necessary to shut down the kiln and allow it to cool so that men could enter and "dig" out the ring, the production loss of 85 bbls. of cement per hour would have been only one part of the expensive job.

Cover Picture....



• When completed, approximately 273,800 cubic yards of concrete will have been poured in the construction of Angostura Dam. Located on the Cheyenne River, near Hot Springs, S. D., this monumental structure is one of the principal units of the Missouri River Basin Project. It is designed to provide irrigation water for 16,180 acres in Fall River and Custer Counties and to aid in controlling major floods. Construction is being carried out under contract by the Utah Construction Company of Ogden, Utah. The government purchased approximately 325,000 bbls. of cement from the Universal Atlas Cement Company of Chicago and the Ideal Cement Company of Denver for use in the dam, spillway section, river outlet, and canal outlet. About 328,560 cubic yards of aggregate was taken from government sites in the area.

Anderson-Dunham Opens Plant On Site of Solvay Process

Anderson-Dunham Concrete Company, whose plant is located on the site of the old Solvay Process Company, about five miles west of Winnfield, La., held a formal opening on December 2, 1949. The company is devoting its production to crushed limestone and ready-mixed asphalt and has tentative plans for the extraction and processing of gypsum. The company plans to ship a test car of gypsum to the Ideal Cement Company.

The property on which the Anderson-Dunham facilities are located, is owned by the Carey Salt Company, which operates a salt mine nearby. The company operates on a royalty basis with a lease from LaSalle Materials Company of Alexandria, La.

Cebu Portland Cement Co. Ups Production 65 Percent

During the first six months of 1949 the Cebu Portland Cement Company in the Philippine Islands produced 555,873 bbls. of cement, according to a report released by the Commerce Department.

This total represents a 65 percent increase over the output during a comparable period in 1948. The firm's new plant, which went into production last May, has raised the output to a maximum of 4,000 bbls. per day.

Nonmetallic Minerals Firms Report Sales and Earnings Showing Profitable Year

Reports from nonmetallic minerals producers for the first three quarters of 1949 indicate, for the most part, a gain in sales and earnings. Pacific Coast Aggregates, Inc., San Francisco, recorded sales of $9,760,159, as compared with $9,470,265 in 1948.

Kelley Island Lime & Transport, Cleveland, showed a net income of $599,959 in 1949, as against $470,244 in 1948.

Business improved for the New England Lime Company, Adams, Mass., which reported sales of $1,077,888. In 1948 sales amounted to $1,038,828. Net profit increased from $35,477 to $92,843.

Jefferson Lake Sulphur Company net profit was recorded as $428,459 for 1949; in 1948, it stood at $280,613. In 1949 stockholders received a total of $368,880, as compared with $219,555 in the previous year.

Texas Gulf Sulphur Company officials chalked up the following totals for the quarter ended September 30: net profit, 1949, $5,672,092; 1948, $6,065,887. Sales, 1949, $14,413,359; 1948, $14,705,182.

For the same quarter the Freeport Sulphur Company reported the following: Net profit, 1949, $1,408,991; 1948, $993,927. Earnings, 1949, $1,408,000; 1948, $932,000.

For the 12-month period ended September 30, the Duval Texas Sulphur Company, Houston, showed sales of $2,889,026, as compared with $3,135,389 in 1948. The net income fell from $853,562 to $733,150.

Sales of the Halliburton Oil Well Cementing Company rose from $39,734,552 in 1948 (nine months) to $42,821,569 in 1949; net profit also increased, from $5,101,257 to $5,150,471.

During the first nine months of 1949 American Potash & Chemical reported a net income of $1,169,847 on sales of $9,925,398, as against $1,177,560 on sales of $10,598,112 in 1948.

A net profit of $5,957,148 was recorded by the Dow Chemical Company, Midland, Mich., for the January-September period of 1949. In 1948 the figure stood at $6,393,445 for the like period.

Miles D. Catton New P.C.A. Director of Development

Miles D. Catton, manager of the Portland Cement Association's Soil-Cement Bureau since 1941, has been appointed director of development, effective October 15. The appointment rounds out the organization of the top management staff of the Research and Development Division.

The work of the Development Department under Mr. Catton's supervision will be directed toward the development of new products and processes and to new and improved uses of portland cement and concrete. The program of the department is divided into two parts,

Miles D. Catton

structural development and transportation development.

The structural development work will seek to bring about new uses and improvements in the architectural and structural concrete fields and to develop improved concrete masonry construction and advances in the use of mass concrete as in dams and foundations.

Transportation development activities will be directed toward new and improved uses of portland cement, concrete and soil-cement in the highway, street, airport and railway fields; as well as in erosion control, water, sewerage and drainage facilities.

Mr. Catton has been with the association for 23 years. He joined the staff in 1926 as a highway engineer in the Highways and Municipal Bureau.

From 1933 to 1937, Mr. Catton was assistant to Frank T. Sheets, then consulting engineer and director of development of the association, now its president, and continued his active participation in certain phases of development work until 1946.

Pacific Portland Takes Action To Reduce Dust Inhalation

For several weeks engineers from the San Francisco office of the Pacific Portland Cement Company have been occupied with the installation of a Cottrell electrostatic precipitator for dust collection at the firm's Beaver plant near Gold Hill, Ore. Completion of the project was scheduled for January 1.

Pacific Portland is one of the leaders in this area in taking action to reduce air pollution.

The American Cancer Society, Inc., recently presented to PIT AND QUARRY PUBLICATIONS its 1949 Award for Distinguished Service. The award was made for "continuing assistance and cooperation" in the fight to conquer cancer.

Industry Mourns Passing Of Veteran Engineer— Sidney J. Robison

Sidney J. Robison, a sales engineer for Western Precipitation Corp. in Chicago, and formerly chief engineer of the Universal Atlas Cement Company, died on December 17 at a Chicago hospital.

Mr. Robison was born in Montezuma, Ia., and was educated in the schools of Grinnell, Ia. He was graduated from Grinnell College in 1900 and attended Armour Institute of Technology in Chicago from 1901 to 1903. From 1903 until 1919 Mr. Robison served as chemist, draftsman, construction engineer and consulting engineer with such firms as the General Chemical Company, Armour & Company, the Otis Elevator Company, the Western Steel Car & Foundry Company, the Pullman Company, the Illinois Steel Company and the Pensacola Shipbuilding Company.

During these years of accumulating engineering experience Mr. Robison worked for Universal Atlas at the Buffington plant as a drafting-room checker in 1909-1910, and again at the same plant during 1911-1912 as assistant mechanical engineer. In 1916 he became assistant chief engineer at the Gary Steel mills of Illinois Steel.

Mr. Robison rejoined Universal Atlas as engineer at the Chicago office on October 1, 1919, and three months later, on January 1, 1920, was promoted to assistant chief engineer. He was appointed chief engineer of the company on March 1, 1937, which position he held with distinction until his retirement at New York in 1944. Following his retirement he became a sales engineer for Western Precipitation Company.

As an engineer of exceptional ability, Mr. Robison was intimately identified with important work for Universal Atlas, notably in the construction of its Buffington Harbor, the Waco plant power station, and the Hudson, Leeds and Northampton plants.

Sidney J. Robison

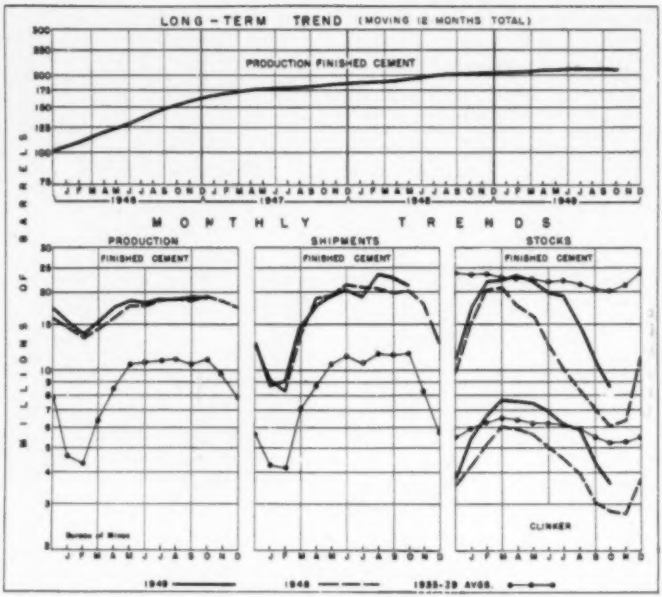
N.S.G.A. and Mines Bureau Work Out New Plan For Annual Safety Contest

The National Sand & Gravel Association has made a new arrangement with the U. S. Bureau of Mines concerning the association's Annual Safety Contest. Hereafter the N.S.G.A.'s safety awards will be made only to member companies, although the actual recording and tabulating will be done within the framework of the Bureau's own contest. Here's how the new arrangement will function:

The annual competition of the Bureau will be open to any operation that produces unconsolidated sand/or gravel in the United States. Competition will cover lost time for disabling injuries and man-hours work of all employees at the plant who are employed by the same company and will include injuries in work up to the point of delivery of the material directly to the consumer or to an individual agency of transportation. Tentatively the enrolled plants will be divided into two major groups; 1. pit and bank operations, and 2. dredge operations. The top ranking plant in each group will receive a large-size Certificate of Achievement, and each man working in the plant will receive a small-size Certificate commending him for his part in the safety record.

At the close of the calendar year the list of the companies participating in the Bureau's industry-wide contest will be sent to the office of N.S.G.A. for indication as to which of the companies are members of the association. When the Bureau receives this membership information, the plant reports and records of these member plants will be pulled from the industry-wide competition and new tabulations and rankings will be made of the member plants. On the basis of the new rankings, the association awards will be presented to the top plants in two groups as follows: (1) plants working 100,000 or more man-hours and (2) plants working less than 100,000 man-hours.

When N.S.G.A. members are enrolled in the Bureau's industry-wide competition, that plant automatically becomes enrolled in the association's contest. Thus, each member plant participates in two competitions and becomes eligible for the N.S.G.A. trophies as well as for the Bureau of Mines certificates. Only one set of reports will be required and this set will be used in both competitions. This procedure will eliminate the association's objection to the former arrangement, under which the Bureau's method of handling the contest permitted not only non-members, but also some companies which did not actually engage in the sand and gravel business to enter the association's contest.



SUMMARY—The portland cement industry produced 19,057,000 barrels of finished cement in October, 1949, as reported to the U. S. Bureau of Mines—a decrease of 2 percent, as compared with the output in October,1948. Mill shipments totaled 21,277,000 barrels—an increase of 5 percent over the October, 1948, figures, while stocks of 8,577,000 barrels were 41 percent above the October, 1948, total. Clinker production in October, 1949, amounted to 18,249,000 barrels—a decrease of 6 percent, as compared with the corresponding month of the previous year.

PRODUCTION—The output of 19,057,000 barrels of finished cement in October, 1949, came from 146 plants located in 34 states and Puerto Rico. In the same month of 1948, 19,349,000 barrels were produced from 147 plants. Clinker production decreased 6 percent, as compared with the October, 1948, total.

SHIPMENTS—Mill shipments of 21,277,000 barrels increased 5 percent, as compared with October, 1948, totals. The demand for cement, as indicated by mill shipments, declined somewhat when compared with the previous month (September, 1949)—22,763,000 barrels (revised). Shipments were greater in 12 districts and lower in 7 than those reported in October, 1948. The changes range from a decrease of 27 percent in the Indiana-Kentucky-Wisconsin district to an increase of 30 percent in the Ohio district. A decrease of 20 percent was recorded in the Puerto Rican district for October, 1949.

STOCKS—Stocks of 8,577,000 barrels of finished cement on October 31 were 41 percent above the October, 1948, figure, while clinker stocks of the same date amounted to 3,600,000 barrels—an increase of 27 percent.

Azusa Rock & Sand Company Gets $40,000 Dust Collector

Residents of the Azusa-Monrovia, Calif., area received with grateful interest the announcement of Harry E. Bender, president and general manager of the Azusa Rock & Sand Company, that the firm had completed the installation of a dust collecting system in its plant. Mr. Bender stated that his concern had spent approximately $40,000 for the dust-prevention equipment.

In addition to the facilities at Azusa, the company also operates branch plants in Torrance and Pomona, Calif.

Gates Bros. Phosphate Plant Opens at Wendell, Idaho

Completion of a new $1,000,000 phosphate processing plant at Wendell, Idaho, owned by the Gates Brothers, has been announced by Charles T. Gates, president of the firm.

Mr. Gates is one of five brothers who last summer began construction of the plant. The brothers Gates stated that production of "treble phosphate" would begin immediately at the rate of 100 tons per day. Output is scheduled to go to the Idaho Farm Bureau. Phosphate rock, the raw material, is shipped to Wendell from southeastern Idaho by rail. At the Gates plant it will be crushed, processed, dried, pelletized, and sacked in 100-lb. bags. General manager at the plant is George Wilkins.

New Stuntz-Yeoman Plant Relieves Agstone Shortage

Production of agricultural limestone and crushed stone is in full swing at the plant of the Stuntz-Yeoman Company near Kokomo, Ind., where the firm is exploiting a new source of stone.

The plant at Kokomo is a branch of the firm's stone-crushing division. The owners have been conducting a successful quarry operation at Delphi, Ind., for the last five years. The production of agricultural limestone in the new location will fill an acutely felt shortage in the area, where farmers have had to depend upon stone hauled from distant sources.

Wolfe River Dam Location Called Lime Industry's Ruin By Arkansas Operators

Recommendations for the construction of the Wolfe Bayou flood control and power dam near Batesville, Ark., have brought protests from lime and limestone operators in the area which may postpone the project. Plant owners pointed out that the White River valley contains some of the most valuable chemical limestone in the nation, which would be lost to industry if the only present means of transportation — the railroad — were removed by the rerouting of the Missouri Pacific tracks. Possibility of a new route would become a probability if the dam were built at the proposed site.

Spokesmen for the lime industry in the Batesville area included Col. E. O. Baxter, manager of the White Lime Company, Howard Miller, president of the White River Limestone Products Company, and George Weigart, a veteran limestone operator, who contended that the state's "last source of limestone" should be protected by altering the plans for the location of the dam. It was suggested by this group that the proposed dam could be constructed 20 miles farther upstream.

An official of the Missouri Pacific Railroad stated that the line could not be rerouted in such a way that all the operators could be served if the dam were built on the presently suggested site.

P.C.A. Soil-Cement Work Headed by J. A. Leadabrand

J. A. Leadabrand has been named manager of the Soil-Cement Bureau of the Portland Cement Association, effective October 15, according to an announcement released by C. D. Franks, P.C.A. vice-president for promotion. Mr. Leadabrand succeeds Miles D. Catton, recently promoted to the post of director of development for the Research and Development Division of the association.

Joining the association staff in June, 1936, Mr. Leadabrand began development and laboratory work on soils and soil-cement mixtures. From 1938 to 1944 he supervised all soil and soil-cement testing in the P.C.A. laboratories. He also assisted in the development of economical and sound construction procedures.

After returning from special service in the Department of Agriculture and later for the Army Air Force, Mr. Leadabrand re-entered the Soil-Cement Bureau of the P.C.A. He is a registered professional engineer in Illinois, an associate member of the American Society of Civil Engineers and an associate of the Highway Research Board.

McCabe Concern Operates $110,000 Plant at Pella, Ia.

One of the newer rock crushing operations in the vicinity of Pella, Ia., is the plant and quarry of Lloyd M. McCabe of Knoxville, Ia., installed and equipped at a cost of $110,000 during the past summer.

Since last July, states the owner, 30,000 tons of rock have been taken from the pit, and daily production has reached 1,000 tons per day. Mr. McCabe expects to operate the plant on a year-round basis. He estimates that the quarry contains 1,000,000 tons of rock suitable for the production of agricultural limestone. The rock tests 90 percent calcium, 10 percent above government specifications.

Potash Company of America To Build $1,000,000 Plant

Carlsbad, N. M., will be the scene of large-scale building activity when construction begins on a new $1,000,000 plant, according to an announcement released by G. F. Coope, president of the Potash Company of America.

The new structure will be used for the production of potassium sulphate and hydrochloric acid. Recently completed at Carlsbad is the firm's $4,000,000 muriate plant.

Establishment of a district office at Salt Lake City was recently announced by officials of the Portland Cement Association. In charge at the new P.C.A. headquarters for Utah will be Edgar B. Wilson, district engineer, who had been serving the association as a structrual engineer in Oklahoma.

African Cement Industry Gets $6,000,000 Boost In Three Vital Regions

Africa is to have a $6,000,000 cement industry in the near future, the first units of more than $2,000,000 in cement plant equipment having been shipped from this country to Mozambique, Portuguese East Africa. According to Byron Pyle, vice-president of the Kennedy-Van Saun Manufacturing and Engineering Corporation of New York, cement output in Mozambique will be doubled when this plant is put in operation.

A second complete cement plant will be shipped to Angola in Portuguese West Africa, within six months, said Mr. Pyle. This will be the first such plant in the area. Both the Mozambique and the Angola plants will have a capacity of more than 70,000 metric tons per year.

Currently being built is a third plant destined for installation by the French Government at Ben Arouk in Tunis, North Africa. This plant is being partly financed by the Economic Cooperation Administration. Its capacity will be over 400 metric tons per day, or more than 140,000 tons per year. Existing facilities at Ben Arouk have a capacity of 68,000 tons per year.

The American equipment includes the first models of Kennedy-Van Saun's expandable units, which permit future expansion without interrupting operation.

America's Only Graphite Mine Operated by Alabama Firm

Near Ashland, Ala., the Alabama Flake Graphite Company of Birmingham operates what is said to be the only graphite mine in the Western Hemisphere. Most of the output of the operation—400 tons per day—is sold to the U. S. government.

Other deposits comparable to the "unlimited" supply at Ashland are in Bavaria, Ceylon and Madagascar.

At Buffington, Ind., the Universal Atlas Cement Company plans to extend and improve its harbor facilities on the shore of Lake Michigan by installing new bulkheads and fill.

• The plant pictured above is operated by H. E. Sargent, Inc., at Vassalboro, Me. The primary crushing unit is a Pioneer 3042 jaw crusher and a 42-in. by 14-ft. apron feeder. Secondary crushing is handled by a 40- by 22-in. triple roll crusher. Other Pioneer equipment includes a 4- by 10-ft. vibrating screen, a 21-cu. yd. steel storage bin, another of 20-cu. yd. capacity, and 150-ft. conveyor.

Best Injury-Severity Rate In 14 Years Established In '48 N.L.A. Safety Contest

Injury severity at the 42 enrolled plants in 1948 was the lowest in the 14-year history of the National Lime Association Safety Competition, according to the Bureau of Mines, United States Department of the Interior, which conducts the annual competition. The injury-severity rate of 1.410 days of disability per thousand man-hours of worktime in participating plants during the year was appreciably better than the previous record-low of 2.925 for 1946. Similarly, the injury-frequency rate of 24.042 disabling injuries per million man-hours was very favorable. In fact, the rate of occurrence of lost-time injuries in enrolled plants was the lowest since 1937.

Winners of awards in the 1948 competition achieved outstanding safety records. The winning plants in each of the four groups, into which the plants are classified as to size and type of operation, had perfect safety records for the year. The National Lime Association will award Certificates of Honor to the seven winning lime plants in recognition of their accomplishments in injury prevention. The winners of awards are:

Quarries with Calcining Plants Working 100,000 or more Man-Hours—Galloway plant, Galloway, Mo., operated by the Ash Grove Lime and Portland Cement Co., 155,163 man-hours without a lost-time injury.

Knoxville plant, Knoxville, Tenn., operated by The Standard Lime and Stone Co., 121,520 man-hours without a lost-time injury.

Quarries with Calcining Plants Working Less than 100,000 Man-Hours—Thomasville plant, Thomasville, Pa., operated by The J. E. Baker Co., 92,749 man-hours without a lost-time injury.

Thomaston plant, Thomaston, Me., operated by the Lawrence Portland Cement Co., 73,269 man-hours without a lost-time injury.

Frederick plant, Frederick, Md., operated by the Shank and Etzler Lime Co., 25,080 man-hours without a lost-time injury.

Underground Mines with Calcining Plants—Bakerton plant, Bakerton, W. Va,. operated by The Standard Lime and Stone Co., 231,945 man-hours without a lost-time injury.

Calcining Plants Only — Ludington plant, Ludington, Mich., operated by The Dow Chemical Co., 113,706 man-hours without a lost-time injury.

The aggregate injury experience of the 42 enrolled plants in the 1948 competition stands out very favorably when contrasted with that of the previous year. The injury-severity rate in 1948 was 74 percent lower than the corresponding rate in 1947. The great improvement in injury-severity resulted from the fact that there were four permanent partial injuries and one fatal injury during the year, as compared with four deaths and ten permanent partials in 1947. The number of days of disability chargeable to these two types of injuries was the lowest since 1946. In addition to the significant reduction in injury-severity, injury-frequency declined sharply in 1948. The rate of occurrence of injuries was 26 percent lower than in the preceding year, and the third-lowest in the history of the competition.

In all, 194 lost-time injuries, which resulted in 11,377 days of disability, occurred at the competing plants in 1948. Causes were stated for 168 of these injuries. Falls of persons, handling materials (other than rock), and burns caused 78 injuries, or 40 percent of the total.

A. H. Smith Sand & Gravel Co. Acquitted in Pollution Case

Alfred H. Smith, operator of the A. H. Smith Sand & Gravel Company, Branchville, Md., was recently acquitted by a circuit court jury in a suit brought by the State Water Pollution Control Commission charging violation of the Maryland anti-pollution law.

Mr. Smith was tried at Upper Marlboro on a warrant charging that he had failed to file a report in compliance with an order of the commission. (The report was demanded when commission chemists stated that discharge from the sand and gravel plant polluted Indian Creek.) He declared that his letter to the commission, in which he disagreed with the results of the analysis, constituted a legal report.

American Cement Industry Makes Good Showing In 1949 Sales, Profits

Major cement manufacturing companies reported favorable results for their operations during 1949 (or fractions thereof), with earnings in most cases higher than for comparable periods in 1948.

For the 12-month period ended September 30, 1949, Alpha Portland Cement Company net sales were $21,024,-047, and the net income was $3,305,820, as compared with a sales total of $18,-162,073 and a net income of $2,347,132 for the 12-month period ended September 30, 1948.

North American Cement Corporation's net income total for 12 months ended September 30, 1949, was $944,677; last year's figure stood at $705,908 for the comparable period. Pennsylvania Dixie Cement Corporation stockholders received a $1 dividend payable on December 15, which brought total 1949 dividends to $1.75, as compared with $1.50 in 1948. During the third quarter of 1949 Penn-Dixie's net profit was $808,-345; net sales were $5,690,930. 1948 figures: $996,888 and $5,615,168, respectively.

Lone Star Cement Corporation reports showed an increase in sales from $39,369,314 in the '48 nine-month period to $47,662,495 in 1949. Net profit rose from $5,227,615 to $6,981,364. Permanente Cement Company spokesmen stated that the nine-month period ended October 30 showed the net profit to be $2,952,607, or $4.21 per share; in the same period of 1948 the profit was $3.81 per share.

Records of the General Portland Cement Company of Chicago indicated that net earnings for the January-September, 1949, period had increased by 28 percent over the comparable period in 1948. The 1949 figure—$3,920,700; 1948—$3,051,200. Net sales for the first three quarters of 1949 were improved by 14 percent, rising from $13,891,600 to $15,-867,600.

Whitehall Cement Manufacturing Company (Philadelphia) declared dividends totaling $8 for 1949, as compared with $6 in 1948. Giant Portland Cement Company net sales in the 12 months ended September 30 were $3,951,790, as against $3,044,197 in the year ended September 30, 1948.

• At the plant shown below, operated by the C. & E. Construction Company, Toppenish, Wash., an 18- by 36-in. Telsmith roll crusher, a 10- by 36-in. Telsmith crusher, a 3- by 12-in. Simplicity screen and four conveyors are driven by a "Caterpillar" diesel D13000 engine.

Spokane Portland Cement Building Program at Irvin Nearing Completion

Work on the Spokane Portland Cement Company's $300,000 expansion and modernization program at the Irvin plant has progressed past the half-way mark, according to Walter B. Neill, president and general manager.

Included in the new equipment being installed is a tube mill for which a new building is being erected adjacent to the present plant. The mill will have a Norblo bag-type dust collector, and will be powered by a 500-hp. motor. Its production capacity will be 105 bbl. per hour, an increase of 20 percent over the present rate of output. The existing mill will be kept for standby and auxiliary use.

To meet the power requirements of the plant's new equipment, the company is also building an outside power substation having three 30,000-lb. transformers. Electrical equipment has been moved to this building for additional space in the plant and also as a safety measure. Mr. Neill stated that the present expansion project is the first major construction program undertaken by the company since the installation of a new kiln 12 years ago. He indicated that the move was made imperative by the rising demand for the firm's products throughout the Northwest.

Collapse of Roof at Trinity Kills Man, Injures Another

One employee of the Trinity Portland Cement Company at Dallas, Tex., was killed and a second was injured when the roof of the main building collapsed on October 24. Crushed to death under the debris was E. T. Spain, 55, whose body was taken from beneath the mass of concrete and steel after three hours of frantic work by fellow employees and firemen. The injured man was F. W. Boyd.

Cause of the cave-in was not known, although one theory is that a bolt of lightning struck the roof, causing it to crack and fall in. Company officials estimated the loss, including damage to the big turbines and generators, at $75,000.

Crippled equipment in the powerhouse caused a temporary shutdown, but by November 21 the management announced that shipment of cement would be resumed.

G. D. Kennedy Joins P.C.A. As Assistant to President

Frank T. Sheets, president of the Portland Cement Association, has announced the appointment of G. Donald Kennedy to the position of consulting engineer and assistant to the president, effective January 1, 1950.

Mr. Kennedy has been deputy state highway commissioner of Michigan, and president of the American Association of State Highway Officials. He also received (1948) the George S. Bartlett Award for "Outstanding Contribution to Highway Progress." Since 1943 he has served as vice-president of the Automotive Safety Foundation.

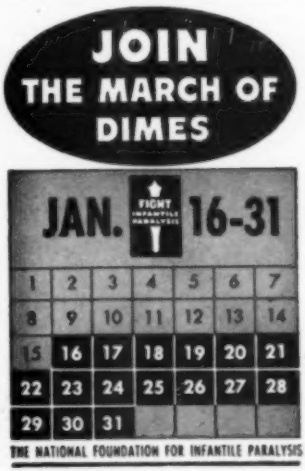
He is the author of numerous engineering reports, among them *The Role of the Federal Government in Highway Development* and *The Story of Highways*.

G. Donald Kennedy

Lockhart & Associates Build Asbestos Mill in N. California

Processing asbestos from a group of claims in the Highland Lake area in California's Shasta and Trinity counties has been reported by N. J. Lockhart and associates, who are installing equipment for a mill at Eagle Roost Point, near Gibson.

Chrysotile asbestos occurs in serpentine in this area. It has short fibers suitable for tile and paper stock.


JOIN
THE MARCH OF
DIMES
JAN. FIGHT INFANTILE PARALYSIS 16-31
1 2 3 4 5 6 7
8 9 10 11 12 13 14
15 16 17 18 19 20 21
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THE NATIONAL FOUNDATION FOR INFANTILE PARALYSIS

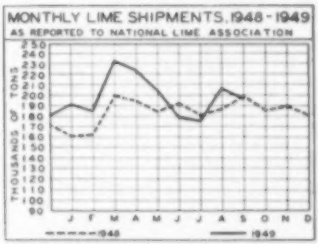
Wilson Replaces Clemmer As Mines Bureau Director Of Southeastern Region

The appointment of Hewitt Wilson, technologist and administrator associated with the Bureau of Mines since 1920, as regional director of the bureau's Region VII, the Southeast, was announced on December 9 by James Boyd, bureau director. At the same time, Director Boyd announced transfer of the regional headquarters from Tuscaloosa, Ala., to Norris, Tenn.

Mr. Wilson succeeds J. Bruce Clemmer, who served as regional director with headquarters at Tuscaloosa during an interim period. Mr. Clemmer is returning to Tucson, Ariz., where he is engaged in important metallurgical research.

As regional director, Mr. Wilson will report directly to Mr. Boyd at Washington, D. C. He will be in charge of all bureau activities in his region, including the stations at Tuscaloosa, Ala., Norris, Tenn., and Raleigh, N. C., and the district and subdistrict offices at Birmingham, Ala., and Jellico, Tenn. The region includes Tennessee, North and South Carolina, Georgia, Alabama, Mississippi and Florida.

Mr. Wilson has been professional and administrative head of the Norris station since it was established in 1938, with a laboratory turned over to the bureau by the Tennessee Valley Authority as its nucleus. When he went there from Seattle, Wash., the bureau's activities were housed in a single building and the staff consisted of only about 15 full-time employees. Under his guidance, the station has grown until today, with three main buildings and several auxiliary ones, it is the largest Bureau installation in the Southeast.



According to data collected by the National Lime Association, 50 companies in September, 1949, shipped 196,496 tons of lime (116,070 quicklime; 80,426 hydrate). Reporting companies represent 59.6 percent of the association members' total capacity of record. Based on Pit and Quarry's estimate for the remainder of the industry, the total shipments for the month by all plants were approximately 363,000 tons. Shipments by uses and grades for September, 1949, were:

	Quicklime (tons)	Hydrate (tons)
Agricultural	5,965	12,042
Building	14,854	41,220
Chemical	95,251	27,164
Total	116,070	80,426

30 years ago in Pit and Quarry

THE keynote of the January, 1920, issue of PIT AND QUARRY was optimism about future business. As several articles and editorials in that issue pointed out, the nonmetallic minerals industries were on the eve of the greatest activity they had ever known. Transportation remained the biggest problem, apparently not due as much to a shortage of railroad cars as to the slowness of the railroads in moving cars. Placing of orders by users earlier in the season to spread out the demand was urged as one remedy.

Many new plants were under construction or planned to take care of the expected increased demand. The cement industry was particularly active in this respect. Ground was reported broken for a new 3,000-bbl. wet process plant by the Bessemer Limestone Company of Youngstown, Ohio. The Allis-Chalmers Manufacturing Company designed this plant and supplied most of the equipment. F. R. Kanengeiser was vice-president and general manager of the company.

The Gulf State Portland Cement Company, Spocari, Ala., announced its plans to spend $1,500,000 to increase the capacity from 1,500 bbls. to 5,000 bbls. daily. The late George P. Dieckman was vice-president of this company. This plant is now a part of the Lone Star chain.

The Lehigh Portland Cement Company announced plans for extensive improvement to its plant east of New Castle, Pa. The Texas Portland Cement Company, Houston, Tex., began the erection of a new kiln and warehouse.

The Coosa Portland Cement Company, Ragland, Ala., which went into bankruptcy in November, 1917, was sold to the newly-formed Coosa Cement Co., Inc., for $675,000. This plant is now owned by the National Cement Co.

The management of the Petoskey Portland Cement Co., Petoskey, Mich., was reported to have been taken over by J. B. John "who is a well-known cement man in Newaygo County". Mr. John is now president and general manager of the Medusa Portland Cement Company. He was reported planning extensive improvements, to be completed late in 1920.

The Cement Export Company, an association of 11 portland cement manufacturers, elected the following officers: President, Charles C. Conn (Giant Portland Cement Co.); first vice-president, Joseph A. Horner (Nazareth Cement Co.); treasurer, Joseph Brobston (Dexter Portland Cement Co.), now president of the Hercules Cement Corporation. It was reported that the association had secured terminal facilities in New York City and that representatives had left to develop the export market in Argentina and Brazil.

In the aggregates industries the Maule Ojus Rock Company, Ojus, Fla., was chartered with $300,000 capital to quarry and prepare crushed rock. Officers included the late Everett P. Maule, president and Richmond L. Janes, secretary.

The Waupaca Sand and Gravel Company opened a new 30-car plant at Binghampton, Wis. The Coon River Sand Co. built a new plant at Des Moines, Ia.

The Herndon Co. of Pittsburgh, Pa., put in operation a $350,000 silica sand plant at Copley, O., which was described and illustrated.

Association activities were again prominent. The National Crushed Stone Association announced a change in the dates of its convention at Louisville, Ky., in order not to entirely overlap the meeting of the National Association of Sand & Gravel Producers in Chicago. It was announced that Thomas H. MacDonald, chief engineer of the Office of Public Roads, would be the principal speaker.

Members of the N.C.S.A. were also prominent at a meeting of Eastern producers and highway officials held in Philadelphia to attempt standardization of specified sizes of aggregates between contiguous states. Among those attending were the following: H. S. Mattimore, then chief engineer of tests for the Pennsylvania State Highway Dept.; Charles M. Upham, then chief engineer of the Delaware State Highway Dept.; John Rice (General Crushed Stone Co.), representing the eastern Pennsylvania district; James Savage (Buffalo Crushed Stone Co.), representing the western New York district.

A brief report told of the studies being made by the National Lime Association on laws in 12 states regulating the sale of liming materials for agricultural purposes. At that time no two of these states had any similarity in their laws nor in the terminology applied to the liming materials. The association held that all such materials should be reported on the basis of their content of the oxides of calcium and magnesium and that the sizes specified should be based on the standard screens recently promulgated by the U. S. Bureau of Standards.

Also in this issue was an announcement of the coming meeting of the Indiana Sand & Gravel Producers Association. One of the speakers was A. H. Hinkle, then chief maintenance engineer of the Indiana State Highway Commission. Mr. Hinkle was also featured at the annual convention of the Indiana Crushed Stone Association.

There was a report of the meeting of the Wisconsin Mineral Aggregates Association. Among the officers reelected was J. C. Buckbee as vice-president. Mr. Buckbee is now retired and living in Los Angeles. O. C. Hubbard was the very active secretary of this group.

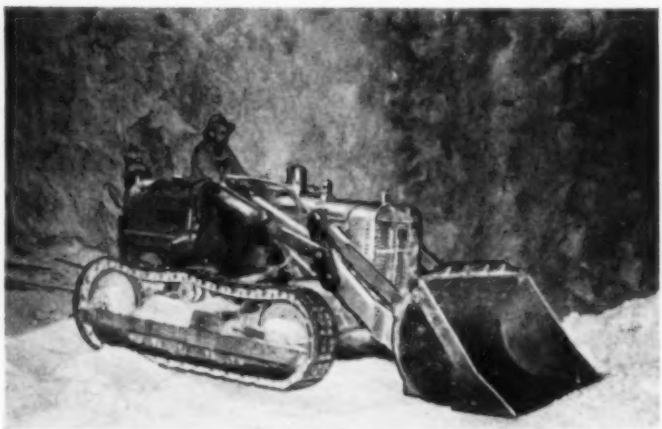
Modern Equipment Employed In Salt Mine 881 Feet Down

From a modest operation 20 years ago which supplied salt to the neighboring homes and farms, the Carey Salt Company's plant near Winfield, La., has grown to the stature of a business which ships its product to 24 states and exports it to Cuba, Puerto Rico, British Honduras and the Canal Zone.

Although the extent of the salt dome is unknown, tests showed that solid salt was found 600 ft. below the mine level. The apex of the dome was discovered 440 ft. beneath the surface of the earth during oil well drilling.

The accompanying photograph shows some of the equipment used at the 881-ft. level. To expedite clean-up operations an Allis-Chalmers HD-5G "Tracto-Shovel" is used. It was necessary to lower the shovel "knocked down" and re-assemble it in the mine.

Approximately 100 men are employed at the mine, which currently produces about 1,000 tons of salt per day.



• This shovel had to be lowered in sections and set up in the mine.

Economic Effect of Percentagewise Freight Rate Increases on Cement

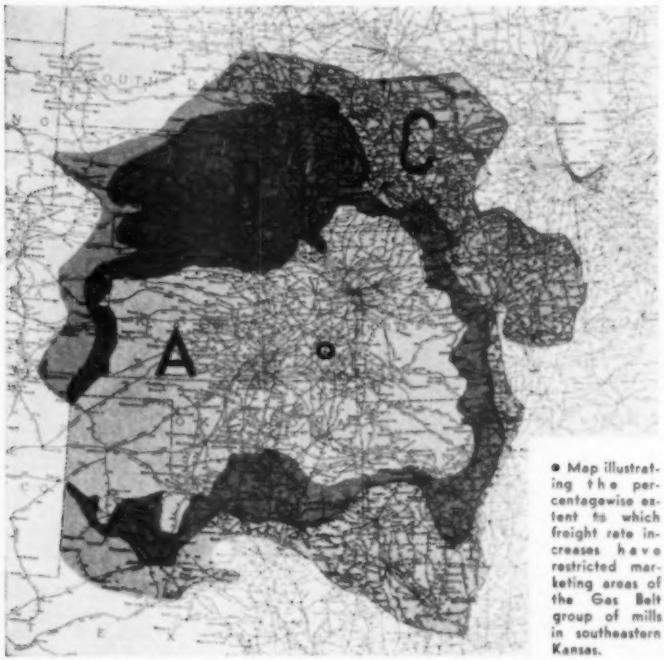
The accompanying letter presents briefly and clearly what is apparently the prevailing attitude among producers of cement, as well as among aggregates producers and other large shippers, towards the recent percentagewise increases in freight rates. The subject of cement freight rates is undoubtedly the biggest problem facing the cement industry, and all other industries. It is corollary of but not of second importance to the freight absorption bill S.1008 now pending in the U.S. Senate.

Lester T. Sunderland is now probably the dean of active cement men in the country and in his more than 60 years in the business of producing and selling cement has seen many changes take place in the industry. He has grown with the industry and with his company, the Ash Grove Lime & Portland Cement Company, of which he has been president, chairman of the board, and is now chairman of the executive committee. He is a past president of the Portland Cement Association and is still active in association affairs and matters pertaining to the industry. His opinions on matters affecting the cement industry have always received respectful attention.

Dear Mr. Trauffer: The recurrent freight rate increases, while very great *per se*—excessive in fact—nonetheless their *major disturbance to business*, (especially as applied to the heavy industries like cement, steel, lime, plaster, lumber, building stone, et al), *has grown out* of the revolutionary and unscientific manner with which they are applied, to wit—"percentagewise" instead of in "cents per 100 pounds", and thus long established relationships between points or origin and destination have been destroyed. The marketing areas of the cement mills have thereby been greatly circumscribed and restricted, varying among the mills, in degree only, according to their respective localities in relation to their markets.

This is illustrated by the attached map (typical of all cement-producing districts) which graphically shows to what extent "percentagewise" increases in freight rates on cement have circumscribed and restricted the marketing areas of the Gas Belt group of mills in southeastern Kansas. If these areas, "A", "B" and "C", are described in terms of population—taking the 1940 census as the basis—area "A" in comparison with area "C" has only 35 percent of the population of area "C". In other words, the number of people the aforementioned mills could reach under the original freight rate scales, area "C" has been reduced 65 percent. Similar tests applied to other producing areas showed similar results, varying only in degree.

Since the first cement mileage rate scale was established in 1918, whereunder rate relationships were determined, the cement rates have increased percentagewise considerably more than 100 percent. It is therefore plain to be seen that if under that scale a competitor had to absorb 30 cents per barrel at some point in order to meet his competition, he would be compelled to absorb more than twice that amount to meet that same competition.



• Map illustrating the percentagewise extent to which freight rate increases have restricted marketing areas of the Gas Belt group of mills in southeastern Kansas.

The Interstate Commerce Commission realized these "percentagewise" increases would in all cases destroy long established relationships and disturb business and industry, and in its published opinions in I.C.C. Ex Parte 162, 166 and 168, admonished the railroads to promptly restore, through voluntary cooperation with shippers, their former rate relationships. However the railroads, by and large, have thus far failed or refused to do so. The result is the railroads have already lost much of their long-haul tonnage, their most lucrative traffic; accordingly, business and industry are faced with a transportation handicap which they cannot overcome.

The railroads have been beset on all sides by increased transportation costs, to meet which more revenues were needed; nonetheless, in their frantic efforts to persuade the I.C.C., under the Railway Act, to authorize recurrent rate increases, apparently not the slightest consideration was given the effect of such increases on the movement of or revenue from specific highly competitive commodities such as cement, with the result that to an important extent they have "priced themselves out of the market", and under the law of diminishing returns have discovered that many *rate increases* have resulted in *revenue decreases*.

At the I.C.C. hearings in Washington (Ex Parte 162), speaking for all carriers, it was testified that they had not studied and had given no consideration to the possible adverse effect of the proposed rate increases on their revenues from the movement of cement.

An important part of these freight rate increases (approximately 57 percent) have occurred since June 30, 1946, since which, until recent months, virtually all building materials were produced in inadequate quantities to supply the market. In other words, a seller's market has prevailed *vs.* a normal buyer's market. Accordingly, buyers everywhere willingly paid the extra freight costs, which sellers could not absorb, in order to procure supplies needed to carry on their businesses. As the supplies of cement and other building materials become plentiful, a normal buyer's highly competitive market will supersede the erstwhile seller's market, and the impact of these excessive freight rates and destroyed competitive relationships will be severely felt by industry and business.

In 1888 the total production of cement in the United States was only about one-quarter million (250,000 barrels). When the first cement freight rate mileage scale was established in 1918, the total annual production was eighty-five million barrels. In 1949 the production will be probably more than two hundred million barrels. During that period all now existing cement plants were built,

(*Continued on page 77*)

Convention Program

Hotel Statler, Washington, D. C.

National Agricultural Limestone Assn. - Jan. 17-19

National Agricultural Limestone Assn., Inc.
Program Outline for 5th Annual Convention

TUESDAY, JANUARY 17

Pan-American Room
10:00
Board of Directors Meeting

WEDNESDAY, JANUARY 18

Morning Session
9:30
Federal Room
President H. C. Gray, Sec-Treas. of Standard Paving Co.
Presiding

Registration
Call to order and welcome by the President.
Presentation by Secretary of the Register of Members present in person or by proxy.
Reading of minutes of previous meeting.
Treasurer's Report—Harry E. Battin.
Report of Committee Chairmen
Finance—Nicholas G. Farber.
Membership—Barney T. Scharbach.
Legislative—John M. Deely.
Percentage Depletion—Cale P. Haun.
Special—Barney T. Scharbach.
Executive Secretary's Report—Robert M. Koch.
Announcement of New Committees.
Old Business.
Recess for Luncheon.

South American Room
Greeting Luncheon
12:30
Director Barney T. Scharbach, Vice-President of Sand & Stone, Inc.
Presiding

"Business Outlook"—Address by H. B. McCoy, Director, Office of Domestic Commerce, U. S. Department of Commerce.

Afternoon Session
2:00
Federal Room
Director Arthur Alvis, Butler, Missouri.
Presiding

Panel Discussion of Operational Problems. This panel will be presided over by Director Arthur Alvis.

Panel Participants

F. O. Reedy, Vice President, Kennedy Van Saun Mfg. & Eng. Corp., Danville, Pennsylvania.

William T. Doyle, President, Sturtevant Mill Company, Boston, Massachusetts.

D. O. Kennedy, Asst. Chief, Safety Branch, Bureau of Mines, Dept. of Interior, Washington, D. C.

Robert M. Patton, Asst. to Executive Vice-President, Plum Run Stone Division of New York Coal Sales Co., Columbus, Ohio.

Vincent Shea, President, Allied Minerals, Inc., West Chelmsford, Massachusetts.

4:15—Report of Nominating Committee and election of New Board Members.

5:00—Meeting of New Board of Directors.

THURSDAY, JANUARY 19

Morning Session
10:00
Federal Room
Director R. M. Seifried, Sales Manager, National Lime & Stone Co.
Presiding

"Our Experiences in Promoting Sales of Agricultural Limestone"—Leonard Fry & William C. Gerhart, Fry Coal & Stone Company.

"The Distinction of Limestone"—Paul N. Doll, Manager of Missouri Limestone Producers' Assn.

Congressional Room
Luncheon
12:30
Director Earl Heckathorn, Treasurer, Stuntz-Yeoman Co.
Presiding

"Building Bigger Acres"—Albert J. Loveland, Under Secretary of Agriculture.

Afternoon Session
2:30
South American Room
Director W. Ray Clark, Everett & Clark.
Presiding

"Modern Soil Conservation"—Dr. Hugh Bennett, Chief of the Soil Conservation Service, U. S. Department of Agriculture

"The Agricultural Conservation Program"—H. L. Manwaring, Deputy Assistant Administrator of Production, U. S. Department of Agriculture.

Evening Session
Federal Room
Reception for Members and Guests
6:00
Congressional Room
Annual Banquet
7:00
President-Elect
Presiding

"The Borders are Down"—Dr. Bob Montgomery, Graduate Professor of Economics, University of Texas.

Canada's 1948 Production Of Sand and Gravel Tops 1947 by 11,000,000 Tons

The commercial production of sand and gravel in Canada during 1948 amounted to 68,670,863 short tons, valued at $30,629,596, as compared with 56,789,569 tons, valued at $23,114,431 in 1947, an increase of 21 percent in tonnage and 32 percent in value. The totals included sand and gravel used by railroads as ballast, gravel used by mines as back fill, and recoveries of sand by dredges, as well as similar materials from other sources.

The greatest increase in the volume of sand and gravel used was in Quebec, where 28,102,377 tons were produced. Ontario's production of 10,468,216 tons was about 16 percent greater than that of the preceding year. Canadian sand and gravel plants screened or washed 8,997,765 tons in 1948. In 1947 the total was 7,330,996 tons, and the quantity of bank or put-run grades amounted to 59,673,098 tons, as compared with 49,458,573 tons in 1947.

Output in 1948 included 46,513,278 tons of mixed sand and gravel for roads, concrete, etc., 7,786,416 tons of straight-run sand for building, concrete, etc., 53,395 tons of molding and core sand, 1,480,568 tons of mine fill and 59,047 tons for other uses. The quantity of crushed gravel was 8,254,505 tons.

Imports of sand and gravel amounted to 134,775 tons, valued at $113,258 in 1948, and exports totalled 383,989 tons, valued at $346,608.

Ada, Okla., to Be Location Of Rock Products Corp. Plant

According to a statement made by William Ryder, an official of the Rock Products Corporation, in an address at Ada, Okla., his firm will soon begin building a mineral wool plant there.

Mr. Ryder stated that the company's plant at Troy, Okla., recently completed a $1,000,000 insulation job at one of the world's largest lubricating oil and grease plants. In addition to rock wool, this plant is turning out large amounts of high-quality agricultural limestone.

Alcoa Cuts Bauxite Output Of Subsidiary Plant At Paramaribo, Surinam

Production of bauxite will be drastically cut by the Surinam Bauxite Company of Paramaribo, Surinam, a subsidiary of the Aluminum Company of America, beginning in January. Reduction of output of the material, the ore from which alumina is made, will amount to 12 to 15 percent, or from 25,000 to 30,000 tons per month.

A spokesman for Alcoa stated that the step was decided upon because of a surplus of the ore in the United States resulting from the current decline in the aluminum industry's business.

Total output of the Polish cement industry in 1948 was approximately 1,700,000 tons, of which 400,000 tons were earmarked for export. Domestic consumption in 1949 is expected to average about 132 pounds per capita as compared with 75 pounds in 1948.

Preliminary Convention Programs

The Stevens Hotel, Chicago, Illinois

National Sand and Gravel Assn. and National Ready Mixed Concrete Assn., January 23-27

SUNDAY, JANUARY 22

The Executive Committees of the National Sand and Gravel Association and the National Ready Mixed Concrete Association will hold separate meetings on Sunday afternoon.

MONDAY, JANUARY 23

The National Sand and Gravel Association Board will meet Monday morning. The National Ready Mixed Concrete Association Board will meet Monday afternoon. The two Boards will hold a joint luncheon. The exhibit will be formally opened at 2 p.m.

State and District Association officials will get together at a luncheon. The Joint Committee on Research will meet at 5 p.m.

TUESDAY, JANUARY 24

The two National Associations will open their conventions with a joint session, with Mr. Robert F. Porter, NRMCA President presiding. He and Mr. Popplewell, NSGA President, will make their presidential addresses, and Mr. Walker and I will submit the annual association reports. The concluding speaker will be Mr. Charles A. Horsky, NSGA-NRMCA counsel, who will discuss "What the New Wage and Hour Law Means to Our Industry."

The NSGA Manufacturers Division will hold their annual meeting at luncheon at 12:30 p.m. The members of the Ohio Ready Mixed Concrete Association will hold a luncheon meeting. Commencing at 3 p.m., there will be a round-table discussion of the new Wage and Hour Law, designed to give members an opportunity to clarify problems of interpretation and enforcement. The annual reception by associate members will be held from 6 to 7 p.m.

WEDNESDAY, JANUARY 25

With Mr. Popplewell presiding, there will be a joint session in the morning. The first speaker will be Mr. Ewan Clague, Commissioner, Bureau of Labor Statistics, U. S. Department of Labor, who will discuss "The Economic Climate in 1950"; the second speaker, Mr. H. S. Fairbank, Deputy Commissioner, Bureau of Public Roads, U. S. Department of Commerce, who will discuss "Highway Needs and Problems". The concluding speaker will be Mr. Leland Hazard, Vice-President and General Counsel, Pittsburgh Plate Glass Company, who will be heard on the subject of "Security and a National Labor Policy."

There will be a joint luncheon of the two National Associations, with Mr. Harris N. Snyder, Vice-President of NSGA as presiding officer. The featured speaker will be Mr. Samuel C. Hadden, Chairman of the State Highway Commission of Indiana, and former President of the American Association of State Highway Officials. Sand and gravel and ready mixed concrete safety trophies will be presented. At 3 p.m. there will be an organization meeting of the NRMCA Committee on Driver Education.

THURSDAY, JANUARY 26

NRMCA will hold a separate session, with Mr. William Moore, Vice-President of the Association, presiding. (The NSGA will not be in session this morning). The session will open at 9 a.m., with an exhibition of the new film of the Portland Cement Association, produced in color and sound, entitled "The Drama of Portland Cement." Merchandising discussions will dominate this session. The first two program topics will be: "What Surveys Disclose to be The Existing and Prospective Markets for Ready Mixed Concrete" by W. G. Kaiser, Assistant Director of Promotion, Portland Cement Association; and "Use of Advertising and Direct Mail in Developing Ready Mixed Concrete Markets" by Charles Reeno. There will then be a panel discussion of local programs for promoting the use of ready mixed concrete, with Mr. Robert C. Collins as Moderator. The following will serve as Mr. Collins' panel: Lee E. Knack, Assistant General Manager, The Fountain Sand and Gravel Company, Pueblo, Colorado; R. P. Mumford, Secretary, The Beckley & Myers Company, Springfield, Ohio; and M. Eugene Sundt, Vice-President & Manager, Albuquerque Gravel Products Company, Albuquerque, N. M. The NRMCA Committee on Safety will hold a luncheon meeting.

NSGA will meet in the afternoon. (There will be no NRMCA session). The presiding officer will be Mr. E. K. Davison. Program topics and speakers are as follows:

"Investigation of Effects of Soft Particles in Concrete Aggregates" by Stanton Walker and D. L. Bloem; "Power Factor Correction" by J. V. Owens, General Superintendent, Eastern Rock Products, Inc., Utica, N. Y.; Symposium on Prospecting for Sand and Gravel—Field Experiences in the Southwest, by J. Rutledge Hill, President, Gifford-Hill and Co., Inc., Dallas, Texas.—Field Experiences in the Northwest by J. L. Shiely, Jr., Vice-President, J. L. Shiely Co., St. Paul, Minn.; "Application of Seismic and Resistivity Methods" by R. Woodward Moore, Physical Research Director, Bureau of Public Roads, U. S. Department of Commerce. The NSGA Committee on Operating Problems will hold a business meeting following the close of the session.

FRIDAY, JANUARY 27

NSGA will hold its final session with Mr. A. R. Shiely, NSGA Treasurer, presiding. (There will be no NRMCA session in the morning). The first order of business will be the election of officers. The remainder of the program follows:

"The Sand and Gravel Industry Faces Problems of Zoning and Land Rehabilitation", by Wm. Edward Hole, Secretary-Treasurer, American Aggregates Corporation; "Reflections on Sand and Gravel and Ready Mixed Concrete Strike in Los Angeles", by Robert Mitchell, President, Consolidated Rock Products Company, with a discussion by A. R. Shiely, Vice-President, J. L. Shiely Company, and Ray V. Warren, Engineering Representative, Western Pennsylvania Sand and Gravel Association; "Influence of Granular Base Courses in Improving Pavement Performance" (illustrated by color film), by Kenneth B. Woods, Professor of Highway Engineering and Associate Director, Joint Highway Research Project, Purdue University; and action on proposed amendment of the Constitution of the Association.

NRMCA will hold its concluding session Friday afternoon, with Mr. Norman J. Fredericks, NRMCA Treasurer, presiding. The election of officers will be the first item of business. The rest of the program follows:

"Progress Report on Tests of Admixtures", by Stanton Walker and D. L. Bloem; "Light Weight Concrete in Building Construction", by C. D. Bullock, Regional Structural Engineer, Portland Cement Association; "Ready Mixed Concrete in Highway Construction," a general discussion led by Stanton Walker, H. W. Russell, Engineer of Materials, State of Illinois, Division of Highways, R. R. Litchiser, Chief Engineer, Ohio State Highway Testing and Research Laboratory; "Driver Education"—Progress Report of Committee by Stanton Walker; general discussion led by W. E. Clark, General Manager, Keystone Division, Dravo Corporation.

LADIES' PROGRAM

There will be a brunch for the ladies at 11 a.m. on Tuesday, January 24, in the South Ballroom of The Stevens. Tickets for this brunch may be obtained at the registration desk. Mrs. Robert F. Porter will be hostess on this occasion. The ladies will be able at that time to decide, after listening to a discussion of the various entertainment features available in Chicago, what they would like to do the rest of the week. The purpose of the brunch is to enable them to get acquainted and to map out their own program.

Lone Star's New Building At Limedale, Ind., Dedicated

Dedication ceremonies were held recently at the completion of the Lone Star Cement Company's new service building and meeting hall at Limedale, Ind. Attending the luncheon in the new structure were all employees, officials and salesmen of the firm's Indiana Division.

Substituting for Lone Star's President R. A. Hummel of New York, was Th. Avnsoe, vice-president of the company, who delivered the dedication address. C. O. Von Tress, the Lone Star employee at Limedale with the longest seniority rating, "accepted" the building. The main address was given by John W. Mather of New York, Lone Star's industrial relations manager.

Sale of the Sweetwater Sand and Gravel Company at National City, Calif., by Ralph Northrop to W. H. Gerstenberg was announced recently.

Preliminary Convention Program

The Stevens Hotel, Chicago, Illinois

National Crushed Stone Assn., Jan. 29-Feb. 1

National Crushed Stone Association
Program Outline for 33rd Annual Convention

SUNDAY, JANUARY 29

9:30-5:00—Registration—Third Floor Corridor.

MONDAY, JANUARY 30

9:00-5:00—Registration—Third Floor Corridor.

Morning Session
North Ballroom (3d Floor)

W. S. Weston, Jr., President, National Crushed Stone Association; President, Weston and Brooker Co., Columbia, S. C.
Presiding

9:30—Appropriate Moving Picture.
10:00—Call to Order and Greetings from the President—W. S. Weston, Jr.
10:15—Report on Business Conditions During 1949 and the Outlook for 1950—A Summary of Reports by Regional Vice Presidents Presented by the President—W. S. Weston, Jr.
10:30—Announcement of Committees.
10:45—Report of Engineering Director—A. T. Goldbeck.
11:05—Report of Field Engineer—J. E. Gray.
11:25—Report of Administrative Director—J. R. Boyd.
11:45—"Billions of Dollars—and a Lot More Sense"—Leland Stowe, European Editor, The Reporter Magazine, New York, New York.
12:15—Adjournment.

1:00
Greeting Luncheon
Boulevard Room (2nd Floor)

Gordon M. Davie, President, Consumers Company, Chicago, Ill.
Presiding

"The 'U' in Business"—Dr. Kenneth McFarland, Superintendent of Schools, Topeka, Kansas.

Afternoon Session
North Ballroom (3d Floor)

2:30—"The Secondary Roads Program"—A. C. Leonard, Chief, Secondary Roads Division, Bureau of Public Roads, U.S. Department of Commerce, Washington, D. C.
3:00—"Federal Legislation Affecting Management-Labor Relationships"—John C. Gall, Gall and Lane, Washington, D. C.
3:30—"Significant Developments with Respect to Selling on a Delivered Price Basis"—Speaker to be Obtained.
4:00—Discussion.
4:30—Adjournment.

Evening
6:00-8:00

Cocktail Party Followed by a Buffet Dinner
Grand Ballroom (2nd Floor)
8:00-10:30—Inspection of Manufacturers Division Exposition—Exposition Hall.

TUESDAY, JANUARY 31

9:00-5:00—Registration—Third Floor Corridor.

Morning
North Ballroom (3d Floor)

9:30—Appropriate Moving Picture.
Annual Business Meeting

W. S. Weston, Jr., President, National Crushed Stone Association
Presiding

10:00—Report of Auditing Committee, and Election of Officers and Members of the Board of Directors.
10:50—Greeting of President-Elect.

General Session

N. E. Kelb, President, Cumberland Quarries, Inc., Indianapolis, Ind.
Presiding

11:00—"Aggregates and Their Influence on the Durability of Concrete"—Kenneth B. Woods, Professor of Highway Engineering and Associate Director, Joint Highway Research Project, Purdue University, Lafayette, Indiana.
11:30—"Report on Russia Today"—Robert Magidoff, Former Moscow Correspondent for National Broadcasting Company, New York, New York.

12:30

12:00—Adjournment.

Manufacturers Division Luncheon
(Annual Business Meeting)
Boulevard Room (Second Floor)

This is a luncheon meeting for members of the Manufacturers Division only

Afternoon Session
North Ballroom (3d Floor)

2:30—"Keeping Ahead of the Headlines" Frederic Snyder, New York Newsman and Publicist, Kingston, New York.
3:00—"Developing Public Demand for Good Roads"—C. H. Sells, Director, New York State Good Roads Association, Albany, New York.
3:30—"Bituminous Concrete Pavements"—Raymond Harsch, Manager, Asphalt Department, Shell Oil Co., San Francisco, Cal.
4:00—Adjournment.

Evening

8:00—Specialized Group Meetings or Accident Prevention.

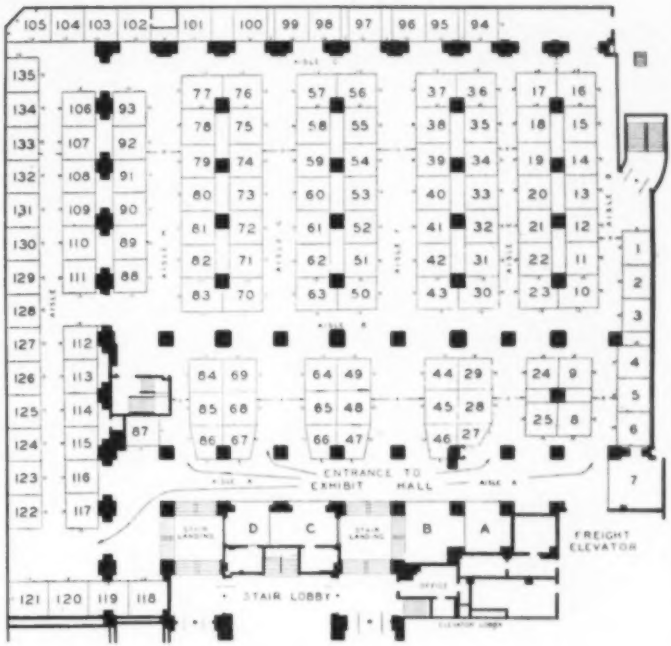
(Continued on page 74)

List of Exhibitors—N.S.G.A. and N.R.M.C.A.

COMPANY	BOOTH
Allis-Chalmers Manufacturing Co., Milwaukee, Wis.	60-61-62-63
American Manganese Steel Division of The American Brake Shoe & Foundry Co., Chicago Heights, Ill.	B
Austin-Western Co., Aurora, Ill.	98-99
Barber-Greene Co., Aurora, Ill.	4-5-6
Blaw-Knox Co., Pittsburgh, Pa.	10-11-12
Bucyrus-Erie Co., South Milwaukee, Wis.	33-34
Butler Bin Co., Waukesha, Wis.	128
Caterpillar Tractor Co., Peoria, Ill.	104-105
Chain Belt Co., Milwaukee, Wis.	70-71-72-81-82-83
Challenge Manufacturing Co., Maywood, Calif.	133
Cleaver-Brooks Co., Milwaukee, Wis.	116-117
Concrete Transport Mixer Co., St. Louis, Mo.	123
Concrete, Chicago, Ill.	107
Conserco, Inc., Washington, D. C.	132
Contractors and Engineers Monthly, New York, N. Y.	87
Cross Engineering Co., Carbondale, Pa.	20
Deister Machine Co., Fort Wayne, Ind.	35-36
Dewey & Almy Chemical Co., Cambridge, Mass.	115
Diamond Iron Works, Inc., Mahr Manufacturing Co. Div., Minneapolis, Minn.	127
Dodge Division — Chrysler Corp., Detroit, Mich.	118-119-120-121
Dumpcrete Division, Maxon Construction Co., Dayton, Ohio	112-113-114
Eagle Iron Works, Des Moines, Iowa	57
Gruendler Crusher & Pulverizer Co., St. Louis, Mo.	1
Harnischfeger Corp., Milwaukee, Wis.	41-42
Harristeel Products Co., New York, N. Y.	37
Heltzel Steel Form & Iron Co., Warren, Ohio	134
Hendrick Manufacturing Co., Carbondale, Pa.	8-25
Hercules Steel Products Corp., Galion, Ohio	130
The Frank G. Hough Co., Libertyville, Ill.	131
Iowa Manufacturing Co., Cedar Rapids, Iowa	39-40
The Jaeger Machine Co., Columbus, Ohio	27-28-29-44-45-46
C. S. Johnson Co., Champaign, Ill.	78
Kensington Steel Co., Chicago, Ill.	9-24
Kochring Co., Milwaukee, Wis.	79-80
Lima Shovel & Crane Division, Lima-Hamilton Corp., Lima, Ohio	101
Link-Belt Co., Chicago, Ill.	74-75-76
Littleford Bros., Inc., Cincinnati, Ohio	102
Ludlow-Saylor Wire Co., St. Louis, Mo.	73
McLanahan & Stone Corp., Hollidaysburg, Pa.	89
Mack Manufacturing Corp., New York, N. Y.	92-93
Marion Power Shovel Co., Marion, Ohio	88
Master Builders Co., Cleveland, Ohio	109-110-111
Medusa Portland Cement Co., Cleveland, Ohio	122
N. P. Nelson Iron Works, Inc., Clifton, N. J.	100
New Holland Manufacturing Co., Mountville, Pa.	43
Nordberg Manufacturing Co., Milwaukee, Wis.	14-15
Northwest Engineering Co., Chicago, Ill.	58-59
Pioneer Engineering Works, Inc., Minneapolis, Minn.	C

COMPANY	BOOTH
Pit and Quarry, Chicago, Ill.	D
Portland Cement Association, Chicago, Ill.	7
Robins Conveyors Division, Hewitt-Robins, Inc., Passaic, N. J.	50-51-52-53-54
Rock Products, Chicago, Ill.	A
Sauerman Bros., Inc., Chicago, Ill.	38
Scientific Concrete Service Corp., Elizabeth, N. J.	124
Screen Equipment Co., Buffalo, N. Y.	2-3
Sika Chemical Corp., Passaic, N. J.	125
Simplicity Engineering Co., Durand, Mich.	30-31-32
The W. W. Sly Manufacturing Co., Cleveland, Ohio	108
T. L. Smith Co., Milwaukee, Wis.	47-48-49-64-65-66
Smith Engineering Works, Milwaukee, Wis.	16-17
Solvay Sales Division, Allied Chemical & Dye Corp., New York, N. Y.	129
Stedman's Foundry & Machine Works, Aurora, Ind.	18-19
Stephens-Adamson Manuacturing Co., Aurora, Ill.	97
Symons Clamp and Manuacturing Co., Chicago, Ill.	106
W. O. & M. W. Talcott, Inc., Providence, R. I.	21
Taylor-Wharton Iron & Steel Co., High Bridge, N. J.	77
Thew Shovel Co., Lorain, Ohio	22-23
The W. S. Tyler Co., Cleveland, Ohio	90-91
Universal Engineering Corp., Cedar Rapids, Iowa	55-56
Waukesha Motor Co., Waukesha, Wis.	126
White Motor Co., Cleveland, Ohio	47-48-49-64-65-66
Worthington Pump & Machinery Corp. Ransome Division, Dunellen, N. J.	67-68-69-84-85-86
Woven Wire Fabrics Division of John A. Roebling's Sons Co., Roebling, N. J.	13

Floor Plan—N.S.G.A. - N.R.M.C.A. - N.C.S.A. - A.L.I. Conventions



Booth Layout

Manufacturers' Division Expositions

The Stevens Hotel, Chicago, Illinois

List of Exhibitors—N.C.S.A. and A.L.I.

COMPANY	BOOTH
Allis-Chalmers Mfg. Co.	60-61-62-63
American Cyanamid Co.	38
American Manganese, Steel Division, American Brake Shoe Co.	B
Atlas Powder Co.	10
Austin-Western Co.	98-99
Bacon-Pietsch Co., Inc.	87
Barber-Greene Co.	4-5-6
Bucyrus-Erie Co.	33-34
Caterpillar Tractor Co.	104-105
Cross Engineering Co.	95-96
Cummins Engine Co., Inc.	67-86
Deister Machine Co.	35-36
Detroit Diesel Engine Division, General Motors Corp.	28-29
Du Pont de Nemours & Co., Inc., E. I.	69
Eagle Iron Works	57
Easton Car & Construction Co.	49-64
Euclid Road Machinery Co.	70-83
Frog, Switch & Mfg. Co.	102
Gruendler Crusher and Pulverizer Co.	1
Harnischfeger Corp.	41-42
Harristeel Products Co.	37
Hendrick Manufacturing Co.	8-25
Hercules Powder Co.	44-45
Iowa Manufacturing Co.	39-40
Jeffrey Manufacturing Co.	81-82
Joy Manufacturing Co.	106
Kennedy-Van Saun Mfg. & Eng. Corp.	7
Kensington Steel Co.	9-24
Keystone Driller Co.	12
Koehring Co.	79-80
Lima Shovel and Crane Division, Lima-Hamilton Corp.	101
Link-Belt Co.	74-75-76
Ludlow-Saylor Wire Co.	73
Mack Manufacturing Corp.	92-93
Marion Power Shovel Co.	88
McLanahan & Stone Corp.	89
Murphy Diesel Co.	65-66
Nelson Iron Works	100
New Holland Manufacturing Co., Division of New Holland Machine Co.	43
Nordberg Manufacturing Co.	14-15
Northern Blower Co.	47-48
Northwest Engineering Co.	58-59
Pennsylvania Crusher Co.	78
Pioneer Engineering Works, Inc.	C
Pit and Quarry Publications	D
Robins Conveyors Division Hewitt-Robins Inc.	50-51-52-53-54
Rock Bit Sales & Service Co.	98
Rock Products	A
Roebling's Sons Co., John A., Woven Wire Fabrics Division	13
Sanderson-Cyclone Drill Co.	68
Screen Equipment Co.	2-3
Simplicity Engineering Co.	30-31-32
Smith Engineering Works	16-17
Stedman's Foundry & Machine Works, Inc.	18-19
Stephens-Adamson Mfg. Co.	97
Talcott, Inc., W. O. & M. W.	21
Taylor-Wharton Iron and Steel Co.	77
Thew-Shovel Co.	22-23
Torrington Co., Bantam Bearings Division	134-135
Traylor Engineering & Manufacturing Co.	71-72
Tyler Co., W. S.	90-91
Universal Engineering Corp.	55-56
Vibration Measurement Engineers	46

Preliminary Convention Program

The Stevens Hotel, Chicago, Illinois

Agricultural Limestone Institute, February 1-3

Agricultural Limestone Institute Program for 5th Annual Convention

TUESDAY, JANUARY 31

Evening

West Ballroom (3rd Floor)

8:00—Meeting of Board of Directors.

WEDNESDAY, FEBRUARY 1

8:00-5:30—Registration—Third Floor Corridor.

Morning Session

North Ballroom (3rd Floor)

Joint Session of NCSA and ALI for Operating Men and Equipment Manufacturers

G. D. Lott, Jr., Vice President, Palmetto Quarries Co., Columbia, S. C.

and

Marvin Nelson, Concrete Materials and Construction Co., Cedar Rapids, Iowa

Presiding

8:15—"The Drama of Portland Cement"—Sound and Color Motion Picture Through the Courtesy of Portland Cement Association.

8:45—Presentation of NCSA Safety Awards.

9:00—Panel Discussion of Operating Problems.

Members of the Panel:

F. H. Edwards, New Haven Trap Rock Co., New Haven, Conn.

E. F. Haberkern, Columbia Quarry Co., St. Louis, Mo.

W. H. Ruby, Acme Limestone Co., Ft. Spring, W. Va.

Nelson Severinghaus, Consolidated Quarries Corp., Decatur, Ga.

12:30—Adjournment.

1:00

Joint Luncheon of NCSA and ALI

Boulevard Room (2nd Floor)

H. C. Krause, President, Agricultural Limestone Institute; President, Columbia Quarry Co., St. Louis, Mo.

Presiding

"What's Ahead for the USA"—Merryle Stanley Rukeyser, Economic Columnist, and Radio and Television Commentator, New Rochelle, N. Y.

Announcement of Convention Committees.

Afternoon

2:30-5:00—Joint Inspection by NCSA and ALI of Manufacturers Division Exposition—Exposition Hall.

Special Session for Salesmen

Private Dining Room No. 2 (3rd Floor)

H. A. Clark, Manager, Pit and Quarry Sales, Consumers Co., Chicago, Ill.

Presiding

2:30—"Salesmanship—A Lost Art"—O. J. McClure, Chicago, Ill.

3:15—Discussion of Sales Problems

4:00—Meetings of Convention Committees. Nominating—West Ballroom (3rd Floor). Resolutions—Private Dining Room No. 6. Auditing—Private Dining Room No. 5.

5:00—Adjournment.

Evening

6:00

Joint Reception of NCSA and ALI

(Normandie) Lounge (2nd Floor)

7:00

Joint Banquet of NCSA and ALI

Grand Ballroom (2nd Floor)

W. S. Weston, Jr., President, National Crushed Stone Association

Presiding

"So You Think You're Slipping"—Edward McFaul, Chicago, Ill.

THURSDAY, FEBRUARY 2

9:00-5:00—Registration—Third Floor Corridor.

Morning Session

South Ballroom (3rd Floor)

H. C. Krause, President, Agricultural Limestone Institute

Presiding

9:30—Movie.

10:00—Call to Order and Greetings from the President—H. C. Krause.

10:15—Report of Managing Director—Henry A. Huschke.

10:45—Report of Secretary-Treasurer—J. R. Boyd.

11:00—"The Geology of Limestones"—J. E. Lamar, Geologist and Head, Industrial Minerals Division, State Geological Survey Division, Urbana, Ill.

12:00—Adjournment.

12:30

Greeting Luncheon

North Ballroom (3rd Floor)

P. E. Heim, Vice President, Carbon Limestone Co., Youngstown, Ohio

Presiding

Address by Maurice H. Lockwood, Vice-President, International Minerals & Chemical Corp., Chicago, Ill.

Afternoon Session

South Ballroom (3rd Floor)

W. F. Sharpe, Dillon, Sharpe & Co., Columbus Junction, Iowa

Presiding

2:30—"Between the Rocks"—Alvin V. McCormack, Director, Agricultural Conservation Programs Branch, Production and Marketing Administration, Washington, D. C.

3:00—"Soil Conservation Pays Big Dividends"—R. H. Musser, Regional Conservator, Soil Conservation Service, Milwaukee, Wis.

4:00—Symposium on the Promotional Activities by State Associations and Groups.

6:30

Cocktail Party and Buffet Supper

North Ballroom (3rd Floor)

FRIDAY, FEBRUARY 3

Morning Session

South Ballroom (3rd Floor)

C. A. Bernard, Assistant to Vice President, American Limestone Co., St. Louis, Mo.

Presiding

9:40—"The Gift of Green"—A motion picture in sound and color supplied by Sugar Information, Inc., New York, N. Y.,

10:00—"Grassland Farming in Wisconsin"—F. V. Burcalow, Extension Agronomist, The University of Wisconsin, Madison, Wis.

10:45—Address by George H. Enfield, Associate Extension Agronomist, Purdue University, Lafayette, Ind.

11:30

Annual Business Meeting

H. C. Krause, President, Agricultural Limestone Institute

Presiding

Report of Auditing Committee

Report of Resolutions Committee.

Report of Nominating Committee and Election of Officers and Mamebrs of the Board of Directors.

Greeting of President-Elect.

12:15—Adjournment.

Afternoon

2:00

Meeting of Newly Elected Board of Directors

West Ballroom (3rd Floor)

N. C. S. A. Convention Program

(*From page* 72)

WEDNESDAY, FEBRUARY 1

9:00-5:00—Registration—Third Floor Corridor.

Morning Session

North Ballroom (3d Floor)

Joint Session of NCSA and ALI for Operating Men and Equipment Manufacturers

8:15—"The Drama of Portland Cement"—Sound and Color Motion Picture through the Courtesy of Portland Cement Association.

8:45—Presentation of NCSA Safety Awards.

9:00—Panel Discussion of Operating Problems.

12:30—Adjournment.

1:00

Joint Luncheon of NCSA and ALI

Boulevard Room (2nd Floor)

H. C. Krause, President, Agricultural Limestone Institute; President, Columbia Quarry Co., St. Louis, Mo.

Presiding

"What's Ahead for the USA"—Merryle Stanley Rukeyser, Economic Columnist, and Radio and Television Commentator, New Rochelle, N. Y.

Afternoon

2:30-5:00—Joint Inspection by NCSA and ALI of Manufacturers Division Exposition—Exposition Hall.

Special Session for Salesmen

Private Dining Room No. 2 (3d Floor)

H. A. Clark, Manager, Pit and Quarry Sales, Consumers Co., Chicago, Ill.

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3:15—Discussion of Sales Problems.

5:00—Adjournment.

Evening

6:00

Joint Reception of NCSA and ALI

Normandie Lounge (2nd Floor)

7:00

Joint Banquet of NSCA and ALI

Grand Ballroom (2nd Floor)

W. S. Weston, Jr., President, National Crushed Stone Association

Presiding

"So You Think You're Slipping"—Edward McFaul, Chicago, Ill.

Record Attendance Marks 32nd Annual Convention of National Slag Association

• Harris N. Snyder (Buffalo Slag Co.), Earl L. Flad (Carnegie-Illinois Steel Corp.), L. E. McDermut (Illinois Slag & Ballast Co.), R. N. McDowell (Gary Slag Corp.), and E. W. Bauman (National Slag Assn.).

THE 32nd annual meeting of the National Slag Association, which was held at the Netherland Plaza Hotel, November 29 and 30, 1949, was one of the best yet held from every standpoint. In attendance were

By WALTER E. TRAUFFER

one or more representatives of all but a few of the 24 member companies, which represent over 80 percent of the industry's tonnage. The membership, including four new members, is now the largest in the associations history. The program was well balanced and interesting. Included were the usual routine reports of officers and staff on the condition of the association, its work along research and other lines, legal, technical and other developments, etc. Social activities started with a pre-convention get-together the night of November 28. The next day there was a luncheon, with a reception and the annual banquet in the evening. The directors' meeting was held the following morning, after which there was an inspection trip to the new plant of the American Aggregates Corporation at Hamilton, O., one of the newest and largest plants in the industry.

The election of officers for the coming year was held at this meeting. Re-elected president was Earl L. Flad (Carnegie-Illinois Steel Corp.). The new vice-president is C. A. Barinowski (Birmingham Slag Co.). Also re-elected were: E. W. Bauman, managing director; and William S. Shaw, treasurer. Members of the executive committee in addition to the above are Harris N. Snyder (Buffalo Slag Co.), George A. Mattison Jr. (Woodstock Slag Corp.), and R. O. Dierker (Duquesne Slag Products Co.).

The meeting was opened with an address by President Earl L. Flad. New members and guests were introduced. Fred Hubbard, director of research, then gave his annual report on the research work done since the last meeting. During the year, he said, research was continued in Alabama, Ohio and Maryland through fellowships to determine the value of blast furnace slag as liming material for soil conditioning. No final reports are yet available on the results obtained but indications are that slag is showing up very well in comparison with other liming materials. Semi-final reports from all three fellowships are expected soon.

Mr. Hubbard discussed the arrangement made with the National Bureau of Standards to conduct a series of tests to determine the sound-absorption qualities of concrete masonry units made from air-cooled and expanded lightweight slag. Both types are available at the Sparrows Point, Md., plant of the Maryland Slag Co., and a block manufacturer in Washington has agreed to make the necessary blocks.

Closely related to sound absorption is heat transference through concrete, said Mr. Hubbard, and heat loss tests are now being made through cooperation with the Federal Housing and Home Financing Agency by the Division of Building Technology, Bureau of Standards. Slag of average density is being used in these tests which are being made with varying amounts of air-entraining cement.

Mr. Hubbard also commented on the results of the series of soundness tests of slag concrete blocks which have been completed but on which an official report has not yet been issued to the membership. It was stated that satisfactory strengths were obtained with even the dry slag sand mixes but that durability was best with the wetter mixes.

Some very interesting results were reported from the project of the Southern Research Institute which

• W. E. Bliss (Standard Slag Co.), G. D. Scheuneman (American Materials Corp.), Dan B. Dimmig (American Aggregates Corp.), Fred Hubbard (Midland Slag Co.), and R. O. Dierker (Duquesne Slag Products Co.).

• George A. Mattison Jr. (Woodstock Slag Corp.) and E. W. Bauman (National Slag Assn.).

• C. A. Barinowski (Birmingham Slag Co.) and Morton Harris (Edward C. Levy Co.).

• Morton Harris and Edward C. Levy, both of Edward C. Levy Co.

was started in May, 1948, for the development of superior slag products. Work has been directed largely to a study of the characteristics of slag which are conducive to good foamability and to methods by which desirable characteristics can be secured for the production of a good quality of lightweight aggregate. According to Mr. Hubbard research so far has indicated that high-acid slags, or those in which the base-acid ratio is less than one, are best for foaming into a desirable lightweight material.

It has also been found that placing siliceous sand in the ladles before filling them with molten slag materially increases the acidity of the slag and thus improves its foaming characteristics. The fact that the ladles also skull more easily, said Mr. Hubbard, indicates that not all of the sand is dissolved by the slag. Some work has also been done on the production of cast slag products, on the development of a machine in which to foam molten slag, etc.

With respect to plant-mixed bituminous concrete, Mr. Hubbard reported that the Pennsylvania Slag Association, an associated group, recently took the leading part in a research investigation of various methods of sampling bituminous mixtures. Three laboratories and four Highway Department materials engineers are cooperating in this work, which is expected to result in a more satisfactory method of sampling materials, making the extraction tests, and controlling the product at the plant. Mr. Hubbard also reported on a number of other technical and research developments involving slag, including its use in the resurfacing of old pavements. In the laboratory, said Mr. Hubbard, a new drying oven was recently added, and routine work can be carried on as it develops.

C. A. Barinowski said that by pouring slag in thinner layers better annealing was obtained and the resultant product was stronger and more resistant to abrasion. He also told of some of the tests this company is making independently on the use of slag in concrete masonry.

In his annual report Ed W. Bauman, managing director of the association, reported that the distribution of the Slag Book has now been successfully accomplished and that early acknowledgements indicate that it will justify its cost and the time spent in preparing it. He expressed the appreciation of the association to the Bureau of Mines for its help in this connection and also for including in its 1947 Mineral Yearbook a separate chapter on blast furnace slag. In previous years, said Mr. Bauman, statistics on slag were appended to the sand and gravel chapter. Statistics for 1948, he said, have already been prepared. He also pointed out the value to the industry of having reliable statistics available, citing several instances.

Mr. Bauman also reported on the activities of the association with respects to freight rates, mentioning in particular the success of southern members in getting from the Southeastern Railroads a reduction in freight rates on aggregates generally. Mr. Barinowski figured prominently in this case and gave a brief report on how this reduction was accomplished. Mr. Bauman told of the efforts made to obtain percentage depletion and said that slag is within the scope of legislative action as a nonmetallic mineral. He also reported on the status of the association's agricultural fellowships, on the status of the *Slag Runner*, the associations's monthly industry publication and on other activities.

The first Association-sponsored safety competition, which the U. S. Bureau of Mines is conducting, is well under way, said Mr. Bauman, and members are responding very nicely. The contest started on April 1, 1949, and the final tabulation for the first year will be made some time during June or July of 1950. The winners will be announced shortly thereafter. The trophy, to be awarded by PIT AND QUARRY, will be presented at the next annual meeting. Mr. Bauman also mentioned the possibility that the association might award individual certificates to each of the employees of the winning plant.

The first afternoon meeting devoted entirely to addresses by guest speakers. In the absence of J. R. Gilbert, Chief of the Concrete Branch of the U. S. Engineers, Herbert K. Cook of the Vicksburg office spoke on *Recent Developments in Concrete Technology*. Mr. Cook said that in spite of the many advances in concrete technology there is still no substitute for good materials and good workmanship. The Corps of Engineers, he said, is interested primarily in heavy concrete construction and has been using air entraining cement in large dams since 1946. This type of cement, he said, is used because of increased workability and durability, less bleeding, and because it makes possible a reduction in the amount of cement used, thereby lowering the heat of hydration without the use of cooling pipes within the structure. The use of ice and cold aggregates, he said, now cools the concrete sufficiently.

Mr. Cook described the Corps' new laboratory near Jackson, Miss., and used slides to show the equipment, including a complete aggregate-processing plant, and to illustrate some of the work carried on. He said that results include improved measurement of thermal expansion, the effects of blends and special cements, the means of using reactive aggregates successfully, etc.

Granulated Slag in Highway Construction was the subject of a paper

• Fred Steinacher (Penn-Allen Slag Co.) and Ralph Richards (Great Lakes Steel Corp.)

• Guy C. Baker and Vernon Drake, both of the American Aggregates Corp.

• S. B. McCabe (plant superintendent, American Materials Corp.) and Stanley Dunbar (K. L. Dunbar Co.).

by Charles Allen, research engineer, Ohio State Highway Department. The speaker stated that Ohio's pay-as-you-go system of highway construction makes possible the use of new methods and materials as they become available. According to Mr. Allen, Ohio was one of the pioneer users of slag in highways at first for bases and later for sub-bases and surfaces as well. He described the various types of work in which slag is now used with excellent results. Type A granulated slag, he said, is best for concrete; Type B is not so good to look at but packs better for use in bases.

A. H. Hinkle, district engineer of the Asphalt Institute, reported on *Important Features and Increased Uses of Asphalt in Pavements.* He said that improved designs of asphalt mixes have kept this type of pavement up to the increasingly heavier traffic loads and even up to the more severe needs of landing fields for the heaviest airplanes. Mr. Hinkle also stated that the exhaustion of high-grade aggregates in some sections of the country makes it wise to use lower grades of aggregates wherever they are acceptable and save the better material for higher types of work. He then gave a very complete illustrated description which included nearly every conceivable type of asphalt paving and reclamation method.

The guest speaker at the luncheon was L. B. Craig, division engineer of the Southern Railway System, Louisville, Ky. Mr. Craig stressed the fact that the railroads are always looking for better ballast; superstructures have been improved, but there is much room for improvement in the substructures and the base. The service life of a ballast, he pointed out, is the most important factor and overcomes higher first cost. Cleaning ballast in place, he added, is very expensive.

The annual banquet was an enjoyable affair, both gastronomically and from other angles. The featured attraction was George A. Mattison, Jr., who can rival professionals as a master of ceremonies, humorist, speaker and all-around entertainer.

Freight Rate Increases

(*From page* 69)

and they were established under freight rates and rate relationships which permitted free movement of cement from all mills to all reasonable common markets.

The freight rate condition above described imposes great hardships upon established industries. Obviously *any* condition which makes it *harder* to do business militates in favor of the "large and strong" and against the "small and weak". It is the writer's opinion that many cement mills cannot prosper or even long survive unless and until the present freight rate structure shall be revised and restored to reasonable rates and relationships; and that its concommitant but closely related economic monstrosity—the Supreme Court decision in the Cement Case—shall be clarified so that American business can go its way under the American free enterprise system, which has developed American industry to the highest productivity and efficiency in history.

Some industries can be decentralized; such as *may, will,* under present conditions be forced to do so or discontinue. However, in the nature of things, the *cement industry cannot be decentralized,* because nature has placed its raw materials where they are, and they are not to be found in all states of the Union.

In recent months business failures have been increasing (See Dun and Bradstreet report) and railroad carloadings and earnings have likewise been declining, as have also most all lines of unaided business. These reflect and are co-incidental with the change heretofore mentioned, from *sellers'* to *buyers'* markets under the unsound freight rate conditions above described.

The railroads have in their tariff files the largest array of purely "paper rates" *which move no traffic* in their history. Besides losing much of their long-haul business, they are also losing an ever increasing proportion of their business *to other forms of transportation,* to wit—highway transport and water-borne barges and boats.

The two major issues, to wit: (1.) exorbitant freight rates and the destroyed normal competitive rate relationships between points of origin and destination—affecting adversely virtually all industries and business; and (2.) the Supreme Court decision in the Cement Case *are,* in the writer's opinion, the most serious, imminent and important economic problems now facing the cement industry and our national economy. Only the railroads or the Interstate Commerce Commission can straighten out the former, and only Congress the latter.

Very sincerely,
L. T. Sunderland
Chairman, Executive Committee
Ash Grove Lime & Portland Cement Co.

Mining Firm Rebuilds Road To Move Ore to Its Plant

News of asbestos mining activity in central California indicates that the first loads of material from the Huntley Industrial Minerals newly-acquired property in the Ubehebe Crater district arrived recently in the plant at Bishop. The shipment was made into samples of several non-metallic mineral products for submittal to manufacturing concerns.

To transport the asbestos to the plant from its deposits, Huntley Industrial Minerals rebuilt 35 miles of road from the crater, south of Scotty's Castle, to Tin Mountain. The ore is trucked 220 miles to Bishop in 10-ton loads.

1000 Tons Per Hour—

Kingston's New Plant

View looking toward the 15,000-ton surge pile. The cantilevered conveyors in the background discharge directly over one section of the storage tunnel.

Below: End view of the recovery tunnel shows the tremendous height—97 ft. above the quarry floor—from which the six cantilevered conveyors discharge.

another ON THE SPOT report

WITH the completion late in 1949 of entirely new plant facilities for crushing, screening and stockpiling, the Kingston Trap Rock Company of Kingston, N. J., moved into a prominent place among the country's leading producers of crushed stone. When drilling, blasting and haulage operations are stepped up to the new production tempo early this year, the plant is expected to turn out sized aggregates at the rate of 1000 t.p.h., or roughly four times the output of the facilities previously operated by this company.

Among the new plant's many noteworthy features is the huge two-section open-storage tunnel measuring 43 ft. in width and totaling 736 ft.

General view of the recently completed 1000-t.p.h. crushing and screening plant of Kingston Trap Rock Co. at Kingston, N. J. Both railway cars and trucks can be loaded simultaneously in the two-section recovery tunnel in the foreground. This tunnel is believed to be the largest of its kind ever constructed.

New Jersey Trap Rock Plant Will Crush, Screen at Rate of 1,000 t.p.h. Has Largest Reclaiming Tunnel Ever Built

By

WILLIAM M. AVERY

in length. Believed to be the largest tunnel of this type ever built, it will accommodate approximately 22,000 tons of each of six sizes of aggregates or 130,000 tons in all, of which over 100,000 tons will be free flowing. Several hundred thousand tons can be stored by the use of a dragline and reclaimed the same way or by bulldozer. Clearances are such that both railway cars and trucks can be loaded simultaneously by gravity.

Also noteworthy are the belt conveyors, of which there are 16 in all. These range from 18 in. to 42 in. in width and up to 280 ft. in length. The blending conveyor in the tunnel is 700 feet in length and 30 in. wide. The three main conveyors between the primary and secondary crushers utilize Continental Gin equipment, and were supplied by L. B. Smith. From the secondary crusher on, Bacon-Pietsch conveyors, incorporating Robins idlers, were used throughout. Steelwork for these structures was supplied by Savary & Glaeser.

The quarry from which stone is taken for this mammoth operation was first opened in 1860 for the production of paving blocks and dimension stone. Several relatively small crushing operations were located there in the following years, but from 1915 to 1930 the property was not worked. From 1930 to 1933, when the present owners took possession, a 50-t.p.h. crushing plant was operated. Under the direction of L. R. Gilbert, Kingston began work at once on an entirely new crushing

Below: An 18-ton side-dump semi-trailer being loaded at the quarry face by the 4-cu. yd. electric shovel.

• At present the semi-trailers are dumped at the primary crusher by means of a crane, but eventually two elbow-type dumping mechanisms will be installed at this location.

and screening plant,* which was completed and placed in operation in August, 1933. This 250-t.p.h. installation, with subsequent improvements and additions, served the company's needs until the new facilities were completed last year. A portion of the 1933 installation, including the Kern storage system, will be utilized in the new layout for the production of sands.

The Kingston diabase is covered with overburden which averages 8 to 10 ft. in depth, with occasional pockets as deep as 20 ft. Most of the stripping is done with a Caterpilar DW-10 Carryall, but some use is also made of a rooter and two bulldozers to facilitate the work. Both well drill holes and tunnels are used in blasting operations. Three well drills—a Bucyrus-Erie 27T, a Loomis Clipper and a Keystone—are currently in operation, and it is planned in the near future to augment these with rigs capable of drilling 8- to 10-in. diameter holes. When snake holes are used, they are made with wagon drills.

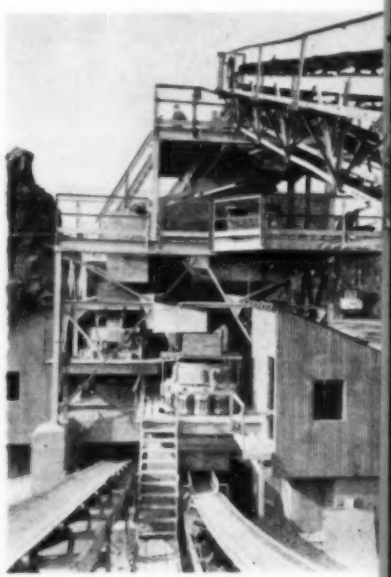
Normally recovery operations, or operations in preparation for recovery, are carried on simultaneously at three separate locations in the quarry. Two Marion electric shovels are operated—a 4-cu. yd. Model 4160 and a 2-cu. yd. Model 480. The smaller is moved in immediately after blasting, and then later replaced by the 4-cu. yd. unit when heavier material is encountered. Meanwhile secondary drilling and blasting operations are carried on at the location from which the larger shovel has just been moved. This arrangement not only results in maximum efficiency, but reduces safety hazards to the minimum. As the new plant is brought up to full production the company expects to purchase additional drilling equipment to increase shovel capacities.

The present haulage fleet consists of three recently purchased Easton TR-13 side-dump semi-trailers, rated at 18 tons each, and five rear-dump Macks which average about 8 tons per load. In addition there are two flat-bed trucks which are used for hauling rip rap or jetty stone. This fleet will soon be augmented by several additional semi-trailer units to bring the total hauling capacity up to the 1000 t.p.h. rate required by the new plant. Temporarily the semi-trailers are being dumped at the primary crusher by means of a crane, but it is the plan to install two conventional Easton elbow-type dumping mechanisms to reduce delays at this point. These will be located on opposite sides of the crusher, leaving two sides clear for

*See Trauffer, W. E.: *New Jersey's Newest Crushed Stone Plant Uses Tower System of Storage*, PIT AND QUARRY, February, 1934, page 39.

• Left: Among the many noteworthy features of the Kingston plant are the well-engineered belt conveyors. The 42-in. by 220-ft. installation shown carries stone from the primary crusher to a vibrating grizzly.

• The 48-in. gyratory crusher is installed entirely below the level of the quarry floor.



• Right: Equipment at the secondary tower includes two 5- by 12-ft. triple-deck vibrating screens and three cone crushers.

end-dumping operations with the older haulage units. This important installation will not be made until the face of the quarry has been worked back far enough to assure against damaging the dumping structures during blasting operations.

The new primary crusher is a 48-in. Traylor gyratory. It is driven through 19 "V" belts by a 2300-volt, 350-hp. General Electric motor. The installation, one of the best engineered of its kind we have seen, is entirely below the level of the quarry floor. A pit under the crusher provides sufficient clearance so that parts can be lowered to a flat car and moved clear of the crusher housing for removal by crane. The pit under the crusher is equipped with a hydraulic elevator for replacing eccentric, bushings, and other parts. Parsons dust collectors have been installed at the primary and secondary crushers and at the screens. It is expected that these will effect a recovery of between 40 and 50 tons per day. A portion of this material will be used in the company's own aggregate bituminizing plant.

The discharge from the primary crusher drops into a timber box above a 42-in. by 220-ft. inclined belt conveyor which discharges over a vibrating grizzly located above the quarry floor grade. Here plus 6-in. core stone is scalped off and discharged directly into trucks. It is planned to bring a siding in at this point, so that railroad cars can also be loaded directly. From the grizzly the flow turns 90 degrees onto the second 42-in. by 220-ft. inclined belt conveyor, which discharges into a 15,000-ton capacity surge pile. The secondary crushing tower is fed from the surge pile by means of a Syntron vibrating feeder and a belt conveyor.

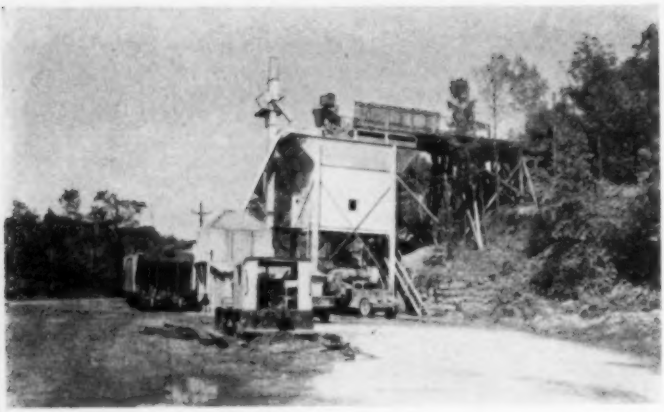
Equipment at the secondary tower consists of two 5- by 12-ft. triple-deck Robins Gyrex vibrating screens, a 7-ft. standard Symons cone crusher, and two 4-ft. Short Heads. Two inclined belts (one fed by the 7-ft. cone and the other by the two Short Heads) move the stone to the main screening tower, where each belt discharges onto a 5- by 12-ft. triple-deck Robins Gyrex screen. There is also a return belt between this tower and the 4-ft. cone crushers for recrushing material of any size. The flow beyond the screening tower is divided into three streams. Dust, grits and other fines are conveyed to the old Kern storage plant, while plus 1-in. stone and minus 1-in. stone are conveyed in opposite directions to the final sizing screens, consisting in each case of two 5- by 12-ft. triple-deck units.

From each of the widely spaced

• In all, there are nine of these 5- by 12-ft. triple-deck vibrating screens at various locations throughout the new plant.

• Right: A view of one of the two identical screen towers at which final sizing is done. Three runout conveyors from each tower discharge sized material over one section of the storage tunnel.

• Below, left and right: These views of the storage tunnel under construction give some impression of its tremendous size. The 43-ft. reinforced concrete arch span was slip-formed, the form being moved forward on a flat car.



• All work on the new plant was done by Kingston's own personnel. Concrete was batched at the company's own modern plant, located adjacent to the quarry, and hauled in transit-mix trucks.

final screening towers three steeply inclined cantilevered conveyors run out over the open storage tunnels, discharging sized stone at an elevation of approximately 97 ft. above the floor of the quarry. The two sections of the storage tunnel are on a common centerline, with a 50-ft.-wide break between to permit trucks to enter and leave either section. The total length is 736 ft., made up of a 360-ft. section for three sizes of plus 1-in. stone, and a 376-ft. section for three sizes of minus 1-in. stone.

The tunnel is of reinforced concrete throughout, and all the concrete for its construction was furnished by Kingston's own modern ready-mix plant located adjacent to the quarry. Located in the roof are approximately 100 gravity-flow manually-operated duplex gates. The 13-ft. arch provides ample room for a 30-in.-wide belt conveyor (running the entire length) for blending various sizes of material, for a standard-gauge railroad track for direct loading of open-top cars, and for two truck roadways. The roadway is paved to the top of the rails with diabase trap rock bituminous concrete.

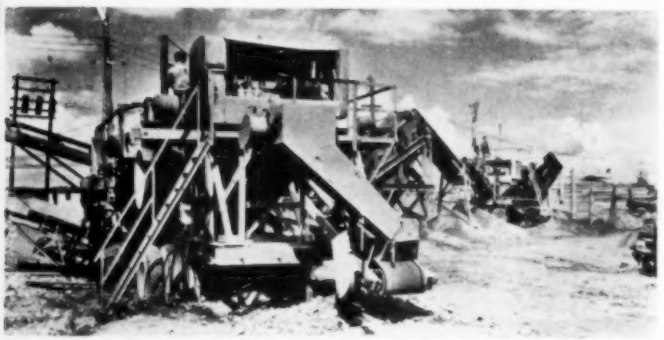
The gates are operated from a walkway which parallels the blending belt. Blended materials may be loaded in the tunnel by means of trippers or run out to a wash tower and loaded there. The tunnel provides a vertical clearance of 19½ ft. above the tops of the rails. One of the final steps in its construction consisted of backfilling the huge dead storage areas on either side with quarry strippings and other waste materials. This measure conserved several thousand tons of finished product which would otherwise have been sacrificed.

The Kern Tower system with which the new plant is connected by means of a long belt conveyor is divided into 8 radial storage compartments. It has a live capacity of 1800 tons, which can be discharged by gravity to the loading system.

When built up to a depth of 40 ft. and a radius of 200 ft., it has a total capacity of 200,000 tons. Material is handled to and from dead storage with a Sauerman 1½-cu. yd. Crescent drag-scraper. Only a small portion of this storage capacity will be required, since it will be used normally only for dust, grits and other fines.

On the same property with the crushing plant Kingston operates a large plant for the production of bituminized aggregates. The initial unit, installed in 1934, has been enlarged several times, and the operation is now one of the largest in the East. It is conducted as a subsidiary, and is known as the Kingston Bituminous Products Co. Present capacity is 100 t.p.h. of hot or cold-coated paving materials.

L. R. Gilbert, founder and owner of the Kingston Trap Rock Co., is still active as president and treasurer of the firm. The new plant is in a large measure his own creation. Practically all of the construction and erection work was done by the company's own personnel under Mr. Gilbert's supervision. Other key personnel include: Irene L. Cullen, vice-president and secretary; Asa H. Farr, vice-president; A. B. Sine, sales manager; Nicholas U. McGowan, promotion director; William H. Klein, in charge of construction; Joseph S. Ostrowski, plant superintendent; Jack Smith, assistant plant superintendent; and Henry Buron, master mechanic.



• At the Koepke Sand & Gravel Company's operation near the Dairyland Co-operative Power Company Dam site at Ladysmith, Wis., this Cedarapids crusher, a Super Tandem plant, is powered by a "Caterpillar" diesel D13000 engine. The plant has a 10- by 36-in. jaw crusher, 18- by 36-in. rolls and a 24- by 36-in. feeder conveyor.

Second Boettcher Fellowship Awarded to Neil O. Haflich

It has been announced that the second Boettcher Fellowship award, sponsored by the Ideal Cement Company, has been awarded to Neil O. Haflich, a graduate student in chemical engineering at the University of Colorado.

The award, which commemorates the work of Charles Boettcher, founder of Ideal, and is made to stimulate research in concrete problems.

In a recently-disclosed deal the property of the Enterprise Lime Company near Enterprise, Ore., was sold to the Pacific Carbide and Alloys Company of Portland through the Reconstruction Finance Corporation. A quarry and three kilns were included in the transaction. The limestone will be used for the production of calcium carbide at Portland.

WASHINGTON NEWS LETTER

another P.D. exclusive

By S. HERBERT UNTERBERGER

AT this season, Washington joins the rest of the country in the popular pastime of reviewing the developments of the year just past and of making forecasts about the year just begun. The Department of Agriculture is frequently regarded as doing the most level-headed job along these lines. In planning its farm program, this department must not only be currently studying the situation on the farms but must be fully aware of the economic prospects of the farmer's customers—consumers and industry.

That department's Outlook and Situation Board recently approved a report which concluded that the economy has been gradually tapering off from the peak of the postwar boom in the last half of 1948 and that this tapering-off process is likely to continue through 1950. They anticipate no serious decline in 1950, nor do they look forward to any substantial improvement.

The report sums up the situation this way; "Barring new developments which cannot be appraised at present, particularly those which might arise from the international situation or from prolonged work stoppages in basic industries, a further slight reduction in economic activity and a relatively slow decline in prices appear likely for 1950".

In reviewing 1949, the Department of Agriculture had this to say: "After almost three years of postwar expansion, economic activity in the nation moved to lower levels in 1949. The declines from the 1948 averages recorded for most economic indicators have been small. However, output of factories and mines, as measured by the Federal Reserve Board index of industrial production, averaged 10 percent below 1948, largely as a result of a sharp reduction in business purchases for inventories. The decline in this index which represents the activity of about one-fourth of total civilian employment, was offset for the most part by continued high activity in many other fields, notably construction, agriculture, trade and the services . . . The small declines this year have left business activity far above pre-war. Compared with 1935-39, employment in 1949 is up almost a third, while population has risen 16 percent. Industrial production is almost three-fourths higher. Wholesale prices are 90 percent higher, while the urban retail price level has risen about two-thirds. Consumer income has increased 200 percent."

Like many other observers of the economic scene, this group was impressed with the fact that consumer expenditures stayed high despite substantial declines in other phases of the economy. They attribute this to some extent to the increasing use of credit by consumers, particularly for the purchase of automobiles. In contrast to consumer expenditures, business expenditures — particularly expenditures for inventories — declined abruptly.

Construction Activity Forecast

The pit and quarry industry will be especially interested in the estimates of future construction activity. In 1949 private construction ran about 6 percent below last year, while public construction ran 30 percent above. Net, there was an increase of 2 percent.

It now appears that residential construction in 1949 will be just about as great as it was in 1948 And this report states that "the strong market for housing is likely to persist through 1950". It makes two additional points about residential construction for 1950: (1) that the public housing program will be expanded and will be a significant element in the residential construction picture; and (2) that if rent controls terminate in mid-year, the demand for new houses may strengthen.

When business expenditures for plant and equipment are considered, the picture is not nearly so rosy. Here there was a decline in 1949 of 7 percent below the 1948 level. There was a sharp decline in machinery production this year, indicating reduced expenditures. Furthermore, sharp declines in plant and equipment purchases are indicated for manufacturing, railroads and other forms of transportation. Surveys of the situation indicate that the downward trends begun in 1949 are likely to continue into 1950.

Farm Outlook

Finally, those companies whose business depends in whole or in part on farm income will be interested in the Agriculture Department's estimate of what that income is likely to be. Here, too, the report exhibits some pessimism.

While another year of fairly high demand for most farm products appears to be in prospect for 1950, the downward trend in agricultural prices and income underway in 1949 is likely to continue through 1950. Both prices received by farmers and cash receipts from farming for 1950 may average about 10 percent below last year. Meanwhile, farm operators' net income is likely to drop somewhat more than cash receipts, since farm production costs and prices paid by farmers are expected to decline less than their cash receipts in 1950.

It is estimated that the realized net income of farm operators in 1950 may be as much as 15 percent below 1949. If such a decline materializes, the net income next year would be about one-third smaller than the postwar record in 1947.

Population Growth and Business Prospects

In areas where the population is expanding there is likely to be increasing demand for the products of industry, while in areas of population decline industry may stagnate. An increase in population means new requirements for housing, new roads, expanded public utilities and more public works, postoffices, schools and other community facilities. All this would mean more business for the pit and quarry industries. But where is the population going to increase most rapidly in the next 10 years? The table on page 91 tells the story.

The total population of the United States is expected to increase about 9 percent in the next 10 years. But the population in the Pacific Coast is expected to increase by 24 percent during that same period. Business opportunities on the Pacific Coast are almost sure to increase. After that, the Great Lakes area and the South are expected to show the largest increases. On the other hand, the smallest increases will be found in the mountain states and the older industrialized areas, the middle Atlantic states and New England.

Because it is not economical to haul the products of the pit and quarry industries long distances,

(*Continued on page 91*)

Cement At All-Time High in 1949

Production, Shipments, Values Reach New Peaks—1950 Viewed As Similar

By WALTER E. TRAUFFER

THE production and shipments of portland cement in 1949 set new all-time highs for the third consecutive year, according to the best information now on hand. Complete official figures are available only through October, but conservative estimates for November and December indicate a total production of about 210,000,000 bbls., about 2 percent over the 1948 record high of 205,420,000 bbls. Shipments were about 212,000,000 bbls., nearly 4 percent over the 1948 record of 204,329,000 bbls. The records of the previous peak years of 1928 and 1942 were also left far behind.

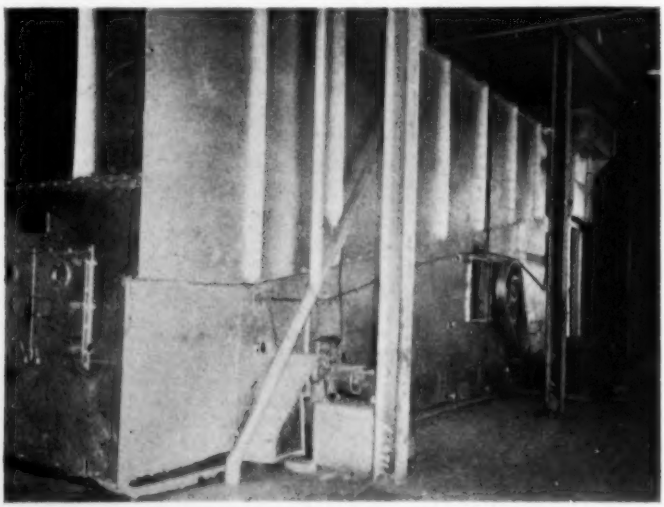
As in every year since 1943, except 1948, shipments exceeded production but at the end of October stocks of finished cement totaled 8,577,000 bbls., 41 percent above the October, 1948, total of 5,668,000 bbls., which was the lowest in 20 years. Again during 1949 the industry produced at very near its rated capacity. There were few lengthy shutdowns for ordinary maintenance and repair work, and it is difficult to believe that many of the plants can go another year at full blast without taking time out.

• This 1240-ft. long heavy-duty concrete road connects Lehigh's Fogelsville, Pa., plant with the new quarry. It is designed for a vehicle load of 85,000 lbs.

Production Handicaps

According to the returns from a questionnaire sent out to the entire cement industry, the handicaps to production seem to have decreased steadily in the last two years. Labor, fuel, and car shortages and strikes, which had such deterring effects in 1947, were less severe in 1948, and in 1949 were apparently relatively unimportant except in a few isolated areas. Producers are optimistic regarding 1950. Labor supply and relations were generally reported to be good; but there was some complaint about the uncooperative attitude of unions and their members, and their unwillingness to do a day's work for a day's pay was held to be a handicap to business. The coal strikes and the shortages resulting in some areas were apparently the most serious handicap to production in 1949. One producer said that because of the coal strikes more coal had to be kept in stock than in the past and some of this had to be stored out-of-doors. The higher moisture content and the greater deterioration of this coal held down clinker production. Few car shortages were reported except in one area affected by a railroad strike. One producer in an area remote from the centers of supply reported some shortage of steel and equipment.

Several producers reporting feel that 1950 will probably see a more insistent demand for pensions on the part of unions, and believe that, since the movement has been given such impetus as a result of the steel strike, pensions will probably have to be granted in other industries, including cement. One said that whatever pensions are granted should take into account that they



• New 8- by 33-ft. air-quenching clinker cooler in Alpha's St. Louis, Mo., plant.

will be partially supplied by the government plan. One operator of a comparatively small plant feels that the pension problem is the most important one now facing small producers, and that it threatens many of them with extinction.

Plant Pricing With respect to the attitude of cement producers regarding the plant pricing methods resulting from the Supreme Court Decision in the Cement Institute Case, opinion seems to be pretty well divided. Comparatively few producers answered this question, but those straddling the fence on the subject formed about half the replies. Several stated that the only difference plant pricing made was to increase the cost of cement to the consumer. Several said this system was workable or even beneficial during periods of high demand but would become impractical should demand fall off and competition increase.

Those opposed to plant pricing considerably outnumbered those for it. Geographical location seemed to make no difference, as producers in all major sections of the country said that inability to meet competition cost them important market areas. Some said they were able to replace the customers in those areas by intensified selling efforts in the areas close to their plant. Others admitted that the system worked well enough now but would not should demand fall off. All agreed that the long-established sales connections they have had to give up will be difficult to renew if freight absorption is later permitted.

The comparatively few producers who were in favor of the plant pricing system seem to be so located with respect to markets that they benefit from it. As one stated, the basing point decision in putting a fence around all the operations in his area has made it possible to overcome all the increased costs.

Costs and Prices Those replying to this questionnaire made it evident that there was a general increase in the cost of production in 1949 but that not all producers were so affected. The increased wages and salaries paid were held largely responsible. One producer reported that higher wage costs were balanced by lower fuel costs.

Further increases in overall costs are expected in 1950 due to anticipated increases in labor, coal, material and freight costs. The trend toward general welfare, pensions, etc., may further increase costs and force price increases if the spread between them—the profit margin—is to be maintained.

Prices were up a little on the average but in many cases were said to be less than the increase in costs. Most producers anticipate further increases to meet higher costs. One dissenter believes that sharper competition will prevent any increase in prices in 1950. Another anticipates a greater necessity to watch efficiencies and advises plant improvements that can really cut costs.

Value and Price No official information is available on the net mill value of the cement produced in 1949, but it is certain that an all-time record was set for the fourth consecutive year. With an increase of 4 percent in shipments and perhaps 5 percent in mill prices the 1948 record total of $445,898,000 was probably exceeded by nearly 10 percent for a total approaching $500,000,000. The average mill price of $2.18 per bbl. in 1948 probably rose to $2.28 or more in 1949, the highest in 60 years.

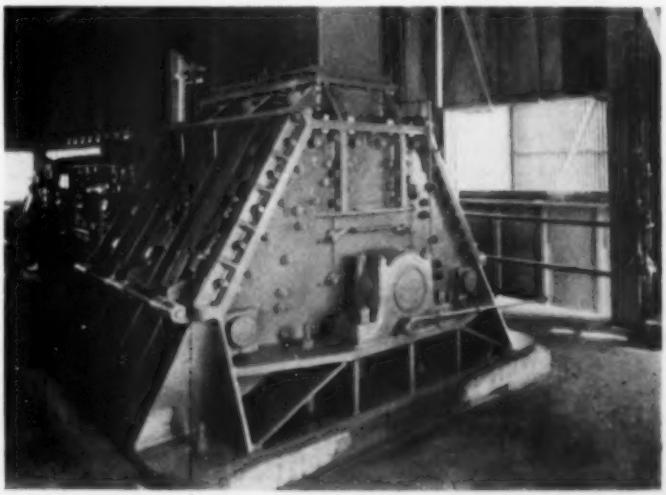
Exports The cement shortage in some sections of Canada is still calling for considerable quantites of cement from some of the U. S. plants located near the border. The shortage has been particularly severe in the vicinity of Hamilton, Ont., where for a time only U. S. cement was available. Huge priority orders for Ontario Hydro-Electric Commission projects throughout Ontario are largely responsible, coupled with a growing building boom.

Exports are being made from this country to the Dominican Republic during periods of unusually heavy demand. The present tariff is $1.44 per bbl. Brazil has exempted imports of cement from duty for the years 1949 and 1950.

Imports Early in 1949 reports were received of the first shipment of cement from Belgium to the United States since the beginning of World War II. This cement was priced well above domestic levels and therefore went only to areas of tight supply along the Atlantic Coast.

A cement shortage in Great Britain apparently prevented any large amount of cement being shipped to this country during 1949. However, cement is reported to be the most consistently profitable of all British exports at present and British prices are said to be the lowest in the world, due largely to the devaluation of British currency.

Future Prospects The prospects for the cement industry in 1950 are definitely good and shipments, according to most producers reporting, are expected at least to equal those in 1949. The construction picture is favorable, with a possible increase in total volume above that of last year. A year ago a drop of 5 percent in volume was expected, but actually the volume remained about the same, with an increase of about 8 percent in total cost. While volume in 1950 is expected to remain about the same as in 1949, indications are that prices may go down a few percent, due to intensified



Impactor-type hammermill and 600-hp. diesel engine in the new 400-t.p.h. crushing plant of Missouri Portland at Fort Bellefontaine, Mo.

competition. The trend toward heavy public construction in 1949, which used a high percentage of concrete, probably was the main reason for the increased demand for cement. This trend is expected to be even more pronounced in 1950.

Capacity Increase The cement industry increased its capacity considerably in 1949 —some estimate as much as 5,000,000 bbls.—and this, of course, had much to do with the industry's ability to take care of the increased demand. Part of this added capacity came from two new cement plants: the 2000-bbl. daily capacity plant of the Arizona Portland Cement Company at Rillito, Ariz., and the new 300,000-bbl. annual capacity plant of the Carolina Giant Cement Company, Harleyville, S. C. Most of the added capacity came from improvement programs affecting nearly all of the existing plants; most of the important programs are described later in this article. A surprising number of plants, however, replaced old worn-out equipment with new without materially affecting capacity.

Future Increases At this time of the year little is usually known about the work to be done during the year but it seems definite that at least four new plants will go into operation in 1950. The 4000-bbl. plant of the Halliburton Portland Cement Compay, Corpus Christi, Tex., is nearly ready to start. The new 6000-bbl. plant of the Missouri Portland Cement Company at Prospect Hill (St. Louis), Mo., is also reported nearly ready. The recently announced clinker grinding and packing plant of the Huron Portland Cement Company at Superior, Wis., is also scheduled for completion late in 1950. Two new kilns will be installed at the Alpena, Mich., plant to take care of the increased clinker requirements. The South Dakota Cement Plant at Rapid City, S. D., is going ahead with the construction of a new 2000-bbl. plant scheduled for completion in May, 1950.

Whether or not Samuel A. Guiberson Jr. and the Whitewater Portland Cement Company will ever build a cement plant at Whitewater Canyon, 6 miles from Palm Springs, Calif., is not yet known. Late in 1948 citizens of the fashionable winter resort filed suit to restrain him from building such a plant because of the dust nuisance. On March 29, after an 8-month battle, Mr. Guiberson won the right to build the plant. He later revealed that a 10,000-bbl., $15,000,000 plant would be built, that the contract for its construction had been awarded to the McNeil Construction Company of Los Angeles, and that considerable machinery had already been purchased from the War Assets Administration. On July 26 voters of Riverside County voted down a zoning bill which would have prevented construction of the plant.

There are the usual rumors floating around about new plants to be built in different parts of the country. Some of these originate from the fact that various companies for various reasons have purchased or optioned property ostensibly for the future construction of plants. Some of the rumored plants are tied to existing producing cement companies. Others are promotions of groups new to the industry.

A state-owned cement plant is proposed for North Dakota. The North Dakota Non-Partisan League is reported working for a bill authorizing such a plant to be voted on at the 1950 primary election. In 1949 Governor Fred G. Randahl vetoed a bill passed by the state legislature which would have appropriated $25,000 for a study of the feasibility of the state entering the cement manufacturing business.

Considerable newspaper publicity has been given recently to a "$10,000,000 cement company" said to have been organized in Dallas, Tex. As yet no confirmation has been obtained nor are the interested parties nor the name of the company known.

The establishment of a state-operated cement plant in North Carolina was again actively promoted during the year.

PLANT DEVELOPMENTS

Alpha The Alpha Portland Cement Company early in 1949 completed what was reported to be a half-million dollar modernization program at its plant near St. Louis, Mo. The chief item of new equipment was a 10- by 380-ft. Smidth kiln which is fired by a Babcock & Wilcox coal mill. The clinker from this kiln goes to a 6- by 33-ft. Fuller air-quenching cooler. A second Western Precipitation Corp. Cottrell precipitator was installed to collect the dust from this kiln. This work increased the capacity of the plant to 4500 bbls. daily, the capacity of the two grinding departments.

Improvements made at other Alpha plants included the installation of three Babcock & Wilcox direct-firing coal mills at Catskill, N. Y.

Arizona For details about the recently-completed new plant of the Arizona Portland Cement Company at Rillito, near Tucson, Ariz., see the information on the parent California Portland Cement Co.

Calaveras The Calaveras Cement Company in 1949 essentially completed a four-year expansion program at its San Andreas, Calif., plant which increased its capacity 80 percent. In 1949 a Cottrell precipitator was installed for the new 11¼- by 360-ft. kiln, supplementing the 2-unit Cottrell which serves the two smaller old kilns.

Calaveras was one of the first cement companies to deliver any large part of its output in its own trucks. Its fleet, now consisting of 14 trucks, most of them Autocar tractors with 150-hp. Cummins diesel engines and hauling 115-bbls. of bulk cement in two Fruehauf bottom-dump trailers, in 1949 hauled over half million barrels of cement for the construction of two dams and other work on the Feather River project. The 425-mile round trip through mountainous country took 12½ hours.

In 1949 Calaveras introduced a new plastic cement.

Two major items of improvement are planned for 1950. The only remaining bottleneck in the plant is the shortage of space for finished cement. Silo capacity will be increased to remedy this. An unprecedented schedule of shipments on several government projects and prospective higher truck rates were responsible for the decision to add several more units to the fleet of company-owned transport trucks.

California Directors of the California Portland Cement Company some months ago authorized the expenditure of $7,843,500 for plant construction and improvements during 1949 and 1950. Of that amount $3,976,000 was for the new 1-kiln, 2000-bbl. plant of the subsidiary Arizona Portland Cement Company at Rillito, Ariz. This plant shipped its first cement on December 6, 1949. It has a 9-½ by 350-ft. Allis-Chalmers kiln.

At California's Colton, Calif., plant a completely new crushing plant is being built, and other improvements will be made at a total cost of $3,867,500.

Carolina Giant The new 800,000-bbl. plant of the Carolina Giant Cement Company, Harleyville, S. C., went into full operation early in the year. This plant was rebuilt from the original and unused Ancor aluminum plant which the Giant Portland Cement Co. took over early in 1947.

Dewey The Dewey Portland Cement Company in 1947 began an important program of expansion and improvement at its Davenport, Ia., plant which included new quarry shovels, a packhouse, kiln ends, air-quenching clinker coolers, remodeling of the river dock and materials storage, etc. Early in 1948 additional work was announced which would increase the capacity of the plant by 1800 bbls. daily. This included the installation of a new Allis-Chalmers rotary kiln, clinker cooler, grinding mill and other equipment. A Dorr thickener, four slurry correction tanks and two storage tanks were also built by the Crosby Construction Co. This work was compleated several months ago. Two new grinding mills are now being installed.

About six months ago a $1,445,000 modernization program got under way at Dewey's Bartlesville, Okla., plant. New shipping facilities, generating equipment, dust collectors, etc., are included. The Crosby Engineering Co. is doing this work, which is near completion.

Halliburton Operations are expected to begin in January, 1950, at the new plant of the Halliburton Portland Cement Company, Corpus Christi, Tex. As the Tex-Mix Cement Co., work on this plant was well along when in 1948 the present management took over. This wet process plant will have a capacity of 4000 bbls. per day. Oyster shells will be used as raw materials, and these will be recovered by a 16-in. Maxon hydraulic dredge. Major equipment includes two 9½- by 300-ft. Traylor kilns, Allis-Chalmers raw and finish grinding mills, Sturtevant air separators, a 175-ft.-dia. Dorr thickener, etc. Power will be supplied by a generating plant with two 2000-hp. and two 1600-hp. Fairbanks-Morse diesel generating sets. The MacDonald Engineering Co. had the contract for constructing the complete plant.

Hercules The Hercules Cement Corporation in 1949 made a number of improvements to its plant at Stockertown, Pa. The most important was the installation of a Pennsylvania hammermill to replace four gyratory secondary crushers. A continuation of the plant improvement program during 1950 is contemplated but details have not yet been finally determined.

Huron Having just completed a major expansion program which increased the capacity of its Alpena, Mich., plant 50 percent and made it one of the largest plants in existence, the Huron Portland Cement Company recently announced a huge new building program to be completed in 1950. Two more new kilns will be installed at the Alpena plant, with the necessary waste-heat boilers, coolers, dust precipitators, coal mills, etc. A new plant will also be erected at Superior, Wis., which will grind, store and package cement clinker brought from Alpena in standard bulk freighters. This plant will supplement the company's ten distributing plants located on the Great Lakes at Saginaw, Detroit, and Muskegon, Mich.; Cleveland and Toledo, O.; Milwaukee and Green Bay, Wis.; Buffalo and Oswego, N. Y.; and Duluth, Minn. These are now served from Alpena by three self-unloading bulk carriers. A modern distributing plant is now replacing temporary facilities at Green Bay, and additional storage silos are being built at Muskegon.

Idaho The Idaho Portland Cement Company, Inkom, Ida., in 1949 concentrated its efforts on keeping the mill in working order. No definite plans have been made for future expansion but some additional equipment will probably be installed within the next year or so.

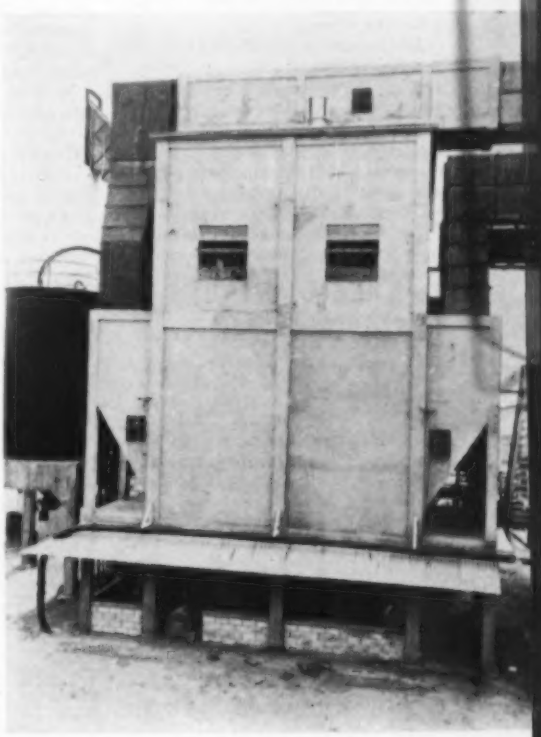
Ideal The Ideal Cement Company, which early in 1949 completed a tremendous expansion and improvement program involving all of its 11 cement plants located in eight states, added comparatively little in the past year. At most plants only the usual maintenance expenditures were made. At Trident, Mont., installation was completed of a new 250-ft. kiln, a rock drier, four new ball mills and two 14-ft. Sturtevant separators. The capacity of this plant was doubled at a cost of about three-fourths million dollars.

Kosmos The Kosmos Portland Cement Company in 1949 modernized the packing facilities and improved a part of the cement storage at its Kosmosdale, Ky., plant. During 1950 the chief construction work will be the installation of Airslide conveyors under its flat-bottom cement storage facilities.

Lawrence The Lawrence Portland Company early in 1949 began the installation of a new 10½- by 314-ft. rotary kiln in its dry-process plant at Northampton, Pa. This kiln with its related equipment is expected to be in operation early in 1950, supplementing the two sililar kilns installed a few years ago.

At Lawrence's Thomaston, Me., plant work has been started on equipment for using oil as well as coal for fuel. A 330,000-gal. storage tank is being built.

Lehigh The Lehigh Portland Cement Company in 1949 increased its capacity by 1,000,000 bbls. annually at a cost of 6 to 8 million dollars. Lehigh in 1949 completed the $1,000,000 rehabilitation and ex-



Electrostatic precipitators installed for four kilns (three old and one new) at Lone Star's New Orleans plant.

pansion program at its Metaline Falls, Wash., plant. This program, which doubled the former 2,000-bbl. capacity of this plant, included the installation of a 10- by 350-ft. Smidth kiln, a Babcock & Wilcox direct-firing coal mill, expansion of the quarry, grinding, coal preparation, storage and other departments.

Near completion is the major rehabilitation program at Lehigh's Fordwick, Va., plant, which will double its capacity to over 1,500,000 bbls. annually. A Symons 7-ft. cone was installed for secondary rock and shale crushing. The old storage for raw materials, clinker and gypsum have been replaced by a single covered storage which will also house coal and pyrite cinders. The five old kilns will continue in service but a new 11- by 200-ft. Smidth kiln with waste heat boiler and Fuller cooler has been added. The old coal mill has been replaced by three Kennedy-Van Saun unit pulverizers. Schaffer poidometers will feed raw materials to two 10- by 22-ft. Kennedy-Van Saun air-swept ball mills. The product of these mills will be a dry finish-ground kiln feed and will be pumped to the blending bins. An interesting feature is that no elevators are used between the primary crusher and the kiln feed storage.

Preliminary steps of a $1,000,000 rehabilitation program are under way at Lehigh's Mason City, Ia., plant. Kennedy-Van Saun crushers and mills, a Cottrell electrical precipitator for kilndust, and 11 Northern Blower collectors in the crushing and grinding departments are being installed.

At the Fogelsville, Pa., plant a heavy-duty concrete road has been completed to serve a new quarry development. This road is 1240 ft. long, 29 ft. wide and 14 in. thick and is designed for a vehicle load of 85,000 lbs.

Lone Star The Lone Star Cement Corporation early in 1949 completed an expansion program at its New Orleans, La., plant which increased its capacity about 50 percent to 2,200,000 bbls. annually. New equipment included a 11¼- by 10- by 375-ft. Smidth kiln, a Smidth raw mill, a cooler, slurry tanks, and additional packhouse, etc.

There has been no recent information on the status of the expansion started in 1949 at Lone Star's Dallas, Tex., plant. This was to include a 10- by 275-ft. kiln, a new slurry basin, enlargement of the quarry, etc.

Marquette The Marquette Cement Manufacturing Company has authorized the expenditure of $1,129,150 for replacements and improvements at its plants. These will increase efficiency but will not materially increase productive capacity. At Oglesby, Ill., plans include the installation of proportioning feeders for masonry cement grinding, facilities for handling and proportioning admixtures for modified cement, and a new coal-conveying system at the No. 2 plant there. At Des Moines, Ia., a new generator set will be installed in the mill building to supply d.c. energy, and d.c. motors will be replaced with a.c. motors in various departments. At Cape Girardeau, Mo., there will be a new packing installation for masonry cement. Additions to the Nashville, Tenn., plant will include a new primary crusher and feeder at the quarry and new controls for mill motors and motor generator sets. At the Cowan, Tenn., plant there will be new electric controls for all mills, a new power distribution system, a new secondary crusher, and major improvements in the coal-handling system.

Medusa The Medusa Portland Cement Company built a 24-silo cement storage and a packhouse at its Wampum, Pa., plant as a part of a $1,000,000 improvement program. These silos were designed and built by the Macdonald Engineering Co.

Missouri The Missouri Portland Cement Company is reported to have its new 6,000-bbl. plant at Prospect Hill (St. Louis) nearly ready for operation. The new primary and secondary crushing plant at Fort Bellefontaine was completed late in 1948. This 400-t.p.h. plant has a 56- by 72-in. Traylor jaw crusher, and a 15-50 Pennsylvania impactor-type hammermill, and Tyler screens.

Monarch The Monarch Cement Company, Humboldt, Kan., in 1949 completed the major improvement program started in 1947. Reported in operation recently are the new 230-ft. Allis-Chalmers rotary kiln with its 70-ft. air-quenching clinker cooler, waste-heat boiler, an auxiliary boiler, a 300-ft. concrete stacks, a coal mill, etc.

National The National Portland Cement Company, Brodhead, Pa., in 1949 replaced its gyratory secondary crusher with a Pennsylvania Impactor in order to effect finer reduction of the stone which has a small amount of clay mixed in it. Tyler screens were also installed. This installation has resulted in decreased power consumption and lower maintenance cost in the raw mill. At present improvements are being made to the gas-analyzing equipment which are expected to result in more efficient burning.

North American The North American Cement Corporation, at its Catskill, N. Y., plant has nearly completed a four-year improvement program which was so planned that capacity is being increased from 4,000 up to 6,000 bbls. daily without interfering with production. The first stage of this program was the installation of a new 10-½ by 340-ft. kiln to replace a smaller kiln. A second new kiln of the same size is replacing two other small kilns. A third preliminator was added in the raw department, and other improvements are being made. A 3,000-k.va. transformer substation is supplementing the present 4,000-k.va. station, and when the second kiln is in operation the waste-heat power plant will be abandoned in favor of purchased power.

Northwestern In 1949 the Northwestern Portland Cement Company opened up a new limerock quarry and completed a new 3100-ft. aerial tramway to the plant.

Northwestern States The Northwestern States Portland Cement Company, Mason City, Ia., has been engaged during 1949 in an extensive rehabilitation program, beginning in the quarry, which will carry over into 1950. No productive capacity is being added.

Olympic The Olympic Portland Cement Company, Bellingham, Wash., which in 1948 installed a new 400-ft. kiln and much other equipment, in March, 1949, put in operation two new Smidth grinding mills. One was an 8½- by 10 2/3-ft. ball mill and the other a No. 2448 tube mill.

Pacific The Pacific Portland Cement Company has near completion at its Gold Hill, Ore., plant the installation of a Cottrell electric precipitator.

Penn-Dixie The Pennsylvania-Dixie Cement Corporation early in 1949 announced that it had purchased the 1,400,000-bbl. plant of the West Penn Cement Co. at

West Winfield, Pa., giving the company better coverage of the North Central part of the country. Late in 1949 a $1,000,000 improvement program was started. This includes replacing and reconditioning much of the burning, cooling and grinding equipment. The Rust Engineering Co. is building a 175-ft. reinforced concrete stacak and doing much other work.

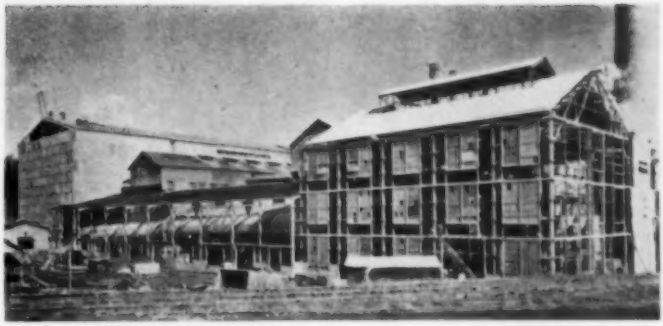
Permanente During 1949 the Permanente Cement Company made the headlines numerous times. Permanente lost control of the 1,000,000-bbl. Pacific Coast Cement Co. plant at Seattle, Wash., which it had operated under lease since 1947. By a Washington Supreme Court decision the Superior Portland Cement Co. on August 31, 1949, acquired ownership of the plant, which it had operated for many years up to 1947, when its lease expired.

As a result of this decision Permanente on September 1 reopened its 80,000-bbl. Duwanish storage and packing plant near Seattle, which was built in 1946 but during the past 18 months had been used only on a standby basis for cement storage. It was announced that this installation will be substantially improved and expanded. Simultaneously it was announced that the S. S. *Santacruzcemeut* has been added to the company's fleet. This and the S. S. *Permanente Silverbow*, which was converted in 1949, are the only two self-unloading bulk cement cargo ships on the Pacific Coast. They have capacities of 10,000 and 10,800 bbls., respectively. The *Santacruzcement* has a Fuller-Kinyon reclaiming system while the *Permanente Silverbow* has tunnel scrapers.

Santa Cruz The Santa Cruz Portland Cement Company, Davenport, Calif., is reported to have completed the installation of a third Lepol combined rotary- and grate-type kiln.

South Dakota The South Dakota Cement Plant, Rapid City, S. D., the only state-owned and operated plant in the United States, is going ahead with the construction of a new 2000-bbl. cement plant to supplement its existing facilities, a 2000-bbl. operation with two kilns and wasteheat boilers, with raw, and clinker storage and cement silos, bag house and pack house.

Two 8- by 12-ft. raw preliminary grinding mills with 350-hp. synchronous motors will be placed adjacent to the existing 7- by 22-ft. mills and will be fed by a Hardinge feeder from the raw storage tank. The preliminator mills will discharge to No. 3 Wilfley pumps over 3- by 8-ft. single-deck Aerovibe vibrating screens, troughs going to the secondary mills and overs going back to preliminators. The product from the secondary mills will be pumped by No. 4 Wilfley pumps to the six existing blending tanks. The material from the blending tanks, after the proper mix has been made, is pumped by a No. 6 Wilfley pump to either No. 1 or No. 2 slurry storage tank. These slurry storage tanks are 70 ft. in diameter by 27 ft. deep and are connected by a service tunnel with the blending tanks of the existing plant and the feed building of the new plant. The tunnel houses all necessary piping for water, slurry and electric conduits.



New kiln with waste-heat boiler which will double the capacity of Lehigh's Fordwick, Va., plant.

The two 70-ft.-diameter by 27-ft.-deep slurry tanks are equipped with Dorr mechanism, a Fuller C-110 rotary compressor, and a No. 5 Wilfley transfer pump. Either of these slurry tanks serves as storage, and transfer is to kiln feed tanks of the existing kiln, or to the new kiln feed tank, which is 20 ft. in diameter and 17 ft. deep. The new kiln tank has two No. 3 Wilfley pumps which feed material to the ferris wheel feeding the new 11- by 375-ft. kiln.

The new kiln is driven by two 60/75 hp. 400/1200 r.p.m., 230-volt direct current, tapered rating, constant torque, adjustable speed motors. The kiln will discharge into a 4½- by 70-ft. Allis-Chalmers air-quenching cooler. A 150-kw. motor generating set is provided for operation of kiln and cooler drive. Ferris wheel feeder is synchronized with one d.c. kiln motor.

The kiln fan is a Sturtevant driven by a 125-hp. motor with provision for an additional 125-hp. synchronous motor if dust collectors are required.

Provision has been made to use gas, oil or coal for burning, and a kiln control panel is being installed for necessary interlocks and controls and also record of burning and production. The kiln will be fired by a Raymond coal mill with a 200-hp. motor.

The cooler discharges into a clinker elevator over a Merrick Weightometer into existing clinker storage. Two clinker elevators are being installed, one as a stand-by.

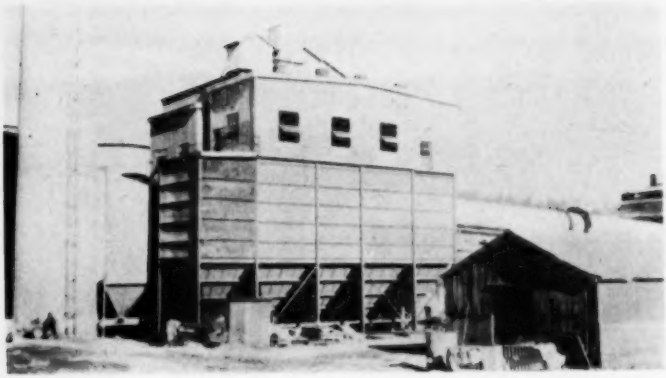
The present Fuller-Kinyon system serves from finish grind to existing cement silos, and provision has been made for a take-off across a bridge to the new 100,000-bbl. silos of ten tanks with one 7-in. pump under each row of silos, pumping to two packing stations. These packing stations have been designed so that any type of cement can be packed in a simple operation. Two 150-bbl. storage tanks are adjacent to the 4-tube St. Regis packer, with air feeder underneath each tank which is controlled by solenoids to feed into an Airslide over an elevator leg over a screen into an Airslide into packer bin. Any excess material flows automatically back into one of the recirculating tanks.

The Mcdonald Engineering Co. designed and is building the plant.

Allis-Chalmers Manufacturing Company has supplied all mills and the kiln with accessories. Fuller Company supplied the compressors and cement pumps. The Dorr Company furnished all mechanism and slurry mixers.

Frank Gardner is the general manager of the cement plant, and Ralph Basler is assistant production manager.

Southwestern The Southwestern Portland Cement Company is reported to have completed an improvement program at



The new electrical precipitator serving the new 360-ft. kiln at the Calaveras Cement Company's San Andreas, Calif., plant.

El Paso, Tex., making major changes in the quarry and raw grinding departments. Locomotives were replaced by trucks, and four old compartment mills were replaced by 8- by 10-ft. Allis-Chalmers ball mills in closed circuit with 14-ft. Sturtevant separators. A third Fuller grate-type clinker cooler, a third separator in the finish mill, and four 4-tube St. Regis packers were also installed.

Spokane The Spokane Portland Cement Company, Irvin, Wash., has carried past the half-way mark a $300,000 expansion and modernization program. Just completed is the installation of an 8- by 20-ft. Traylor ball mill with its Norblo bag-type dust collector and a 500-hp. motor and a new mill building. This mill has a 20 bbl. per hour greater capacity than the old mill, which will be kept in reserve. Buell dust collectors were also installed. In 1950 a Cottrell dust collector will be installed on the plant's two kilns. To meet the increased power requirements an outside power substation is being built.

Trinity The Trinity Portland Cement Division of the General Portland Cement Company recently announced that the capacity of its plant at Eagle Ford, near Dallas, Tex., would be increased by 1,250,000 bbls. annually. The purchase of a large new kiln, grinding mills, and other machinery has been authorized.

Universal Atlas The Universal Atlas Cement Company in 1949 completed the installation of new Cottrell electrical precipitators and a new concrete stack at its Hudson, N. Y., plant. Several departments of its Osborn, O., and Independence, Kan., plants were modernized. The Clarence Center, N. Y., gypsum mine was improved with the installation of new crushing, screening, storage and loading facilities. At Duluth, Minn., a new crushing, screening and loading department was built and dust collectors were installed.

Volunteer The Volunteer Portland Cement Company, Knoxville, Tenn., is reported to be installing a new Vulcan rotary kiln and a Raymond direct-firing coal mill.

PUERTO RICO

Ponce The Ponce Cement Corporation, Ponce, Puerto Rico, is installing a new Allis-Chalmers rotary kiln and making other improvements at a total cost of nearly $1,000,000. This kiln, reported to be the first ever shipped overseas in sections, left Philadelphia July 23 on a 5,000-ton freighter. The 11 sections, up to 40 ft. long and weighing up to 30 tons each, were hoisted aboard the freighter by a floating crane. Most of the sections were lashed to special cradles on the deck. Additions to this plant are also reported to have included a new 4½- by 70-ft. clinker cooker and an 8- by 40-ft. Compeb mill.

Puerto Rico The Puerto Rico Cement Corporation, Guaynabo, Puerto Rico, early in 1949 completed the installation of a No. 8728 Allis-Chalmers Compeb mill, complete with 600-hp. motor, etc.

CANADA

The cement industry in Canada undoubtedly had its biggest year in 1949, exceeding the 14,127,123-bbl. total shipments of 1948, although no official figures are yet available. The business and building boom which has created a high level of prosperity for the past several years showed no let up and none is in sight for 1950 or the foreseeable future. It is reported that all of the eight plants in Canada again operated at peak capacity during the year, but the extensive expansion programs which have been carried out in the last several years have begun to take effect and probably less cement had to be imported than in 1948, when 1,120,671 bbls. were brought in. In spite of this, however, there were cement shortages in several areas during the peak building season, particularly in the vicinity of Hamilton, Ont.

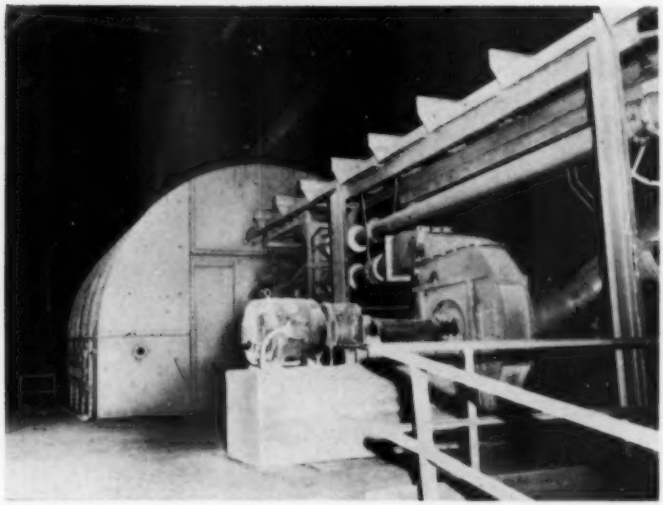
Producers are optimistic about prospects for 1950, and the volume of construction awards and projects planned seem to warrant optimism. No shortages of materials or labor are foreseen which will handicap production, but costs are expected to go up due to increasing labor and freight costs and costs of coal and other materials.

British Columbia The British Columbia Cement Company, Limited, apparently has shelved its plans, reported a year ago, to build a new $4,000,000 plant on a 400-acre property acquired by the company at Deep Bay, Vancouver Island, B. C. The company also had purchased 5,000 acres of land surrounding Horne Lake, 8 miles from Deep Bay, from which raw materials were to be obtained. The plant was to have a capacity of about 700,000 bbls. annually.

In the year ending November 30, 1949, the company's plant at Bamberton, Vancouver Island, produced approximately 1,250,000 bbls. of cement, an all-time record, and far exceeding the 1948 record of nearly 1,100,000 bbls. The increase in capacity was made possible by an extensive modernization program still under way which will increase the plant's capacity to about 1,500,000 bbls. during the coming year. A new and extensive deposit of limestone found near the plant is being developed.

Market conditions in the Province of British Columbia for the sale of portland cement are still brisk, and officials expect the demand to total the entire production of the plant during the coming year.

Canada Cement The Canada Cement Company, Limited, in 1949 virtually completed its vast expansion and improvement program, which over a period of years has affected all of its plants and has increased the total capac-



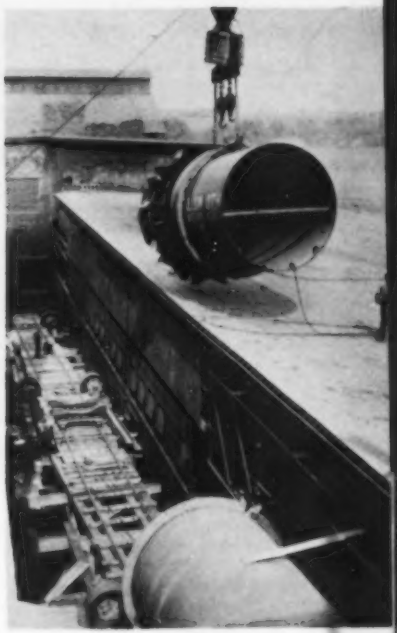
The kiln hood and coal-burning equipment of the new 455-ft. kiln which was a part of the expansion program at the Canada Cement Company's Belleville, Ont., plant.

ity many millions of barrels. The latest major step was the completion of the installation at the Belleville, Ontario plant (No. 5). The new 11¼- by 455-ft. kiln installed, with its related equipment, added 1,200,000 bbls. to the capacity of this plant. In addition, an entirely new clinker mill was installed and a new clinker storage was constructed. The primary crusher was moved to the quarry floor, and a new substation was built.

In 1948 new kilns were installed at the No. 1 plant at Montreal, Quebec, and the No. 12 plant at Exshaw, Alberta. Other extensive work was also done at these plants. The 8-kiln Montreal plant remains the largest in Canada and is now one of the largest in the world. In 1949 a 750,000-cu. ft. Cottrell electrical precipitator was installed at this plant. The improvements at these three plants have added 3,000,000 bbls. to the company's capacity and have done much to relieve the cement shortage in Canada.

The work to be done in 1950 consists chiefly of the removal of a few bottlenecks in various plants, which will add somewhat to capacity by making it possible for kilns and grinding units to work at full capacity. Further improvements contemplated will be made with the end in view of more economical handling of materials and more economical operations generally.

St. Mary's Cement During 1949 the St. Mary's Cement Co., Limited, St. Mary's, Ont., completed the installation of a 10½- by 350-ft. Unax kiln and a Tirax coal drying and grinding mill, all supplied by F. L. Smidth & Co. In addition, four 3,500-bbl. slurry storage tanks were added, each with mechanical and air agitators.



A derrick was required to lift sections of the new 350-ft. kiln over the roof of the old kiln building.

Plans for 1950 include a new crushing and rock-handling department to be located on the quarry floor with belt conveyors to storage at plant level. In this plant will be two new crushers, a Traylor 48- by 60-in. jaw crusher, and a Pennsylvania CF-15-50 reversible Impactor which will be in closed circuit with ⅜-in. screens.

In installing the new kiln it was necessary to hoist the sections of the kiln over the roof of the building housing the existing kiln. This was done by a stiff-leg derrick with a 116-ft. mast and 100-ft. boom and was accomplished without incident.

Washington News Letter

(*From page* 83)

these data on long-range business prospects for each region should have special significance. When considering plans for expansion, it should certainly be recognized that New England and the Middle Atlantic States will hardly be able to support the same amount of expansion as the Pacific Coast.

Region	Estimated population increase between 1950-1960
Pacific: Calif., Ore., Wash.	24 percent
East No. Central: Wis., Mich., Ill., Ind., Ohio	10 percent
East So. Central: Ala., Ky., Miss., Tenn.	10 percent
South Atlantic: Del., Md., Va., W. Va., N.C., S.C., Ga., Fla.	9 percent
Mountain: Mont., Ida., Wyo., Utah., Nev., Colo., Ariz., N.M.	8 percent
West. So. Central: Tex., Okla., Ark., La.	8 percent
Middle Atlantic: N.Y., Pa., N.J.	7 percent
New England: Me., Vt., N.H., Mass., Conn., R.I.	4 percent
West No. Central: N.D., S.D., Neb., Minn., Iowa, Mo., Kan.	3 percent
Total U. S.	9 percent

Washougal Sand & Gravel Gets New Name, New Owner

Ownership of the Washougal Rock Company, Washougal, Wash., has passed from its former operators, Canfield, Allen & Curtiss to M. C. Skelton, who is now operating the plant under the name of the Evergreen Sand and Gravel Company. Bill Canfield is serving as foreman.

Mr. Skelton plans to replace all the present equipment and to keep the plant open throughout the year. On order are two crushers, a double-deck screen, and a 24- by 80- conveyor. The new owner states that about $45,000 has been expended to re-equip the plant. All sizes of stone are processed, and sand is shipped from the lower (Washougal) river.

Banner Year For Aggregates in 1949

Sand and Gravel and Crushed Stone Expected to Hold Pace in 1950

By WILLIAM M. AVERY

FROM production data submitted to PIT AND QUARRY by producers of sand and gravel and crushed stone, it seems probable that the 1949 output of these basic construction materials established new records for both industries. Based on the average gain determined for approximately 3 percent of the sand and gravel industry, that industry's overall production in 1949 (including commercial, government and contractor operations) scored an increase of 2¼ percent, bringing the total output to approximately 326,000,000 short tons, as compared with the 318,735,000 short tons reported to the Bureau of Mines for 1948. A 4 percent sample of the crushed stone industry indicates a production increase for 1949 of about 5 percent, or approximately 235,000,000 short tons, as compared with the 223,863,780 short tons reported for 1948. Stone used in the production of cement, lime, and roofing granules is not included in this total.

The compiled survey data plainly indicates that there was a general leveling-off of production in all sections of the country, and in some areas this trend was sufficiently pronounced to result in small declines from the 1948 output rate. New plant capacity, and sizable increases in the output of many large producers more than offset these losses.

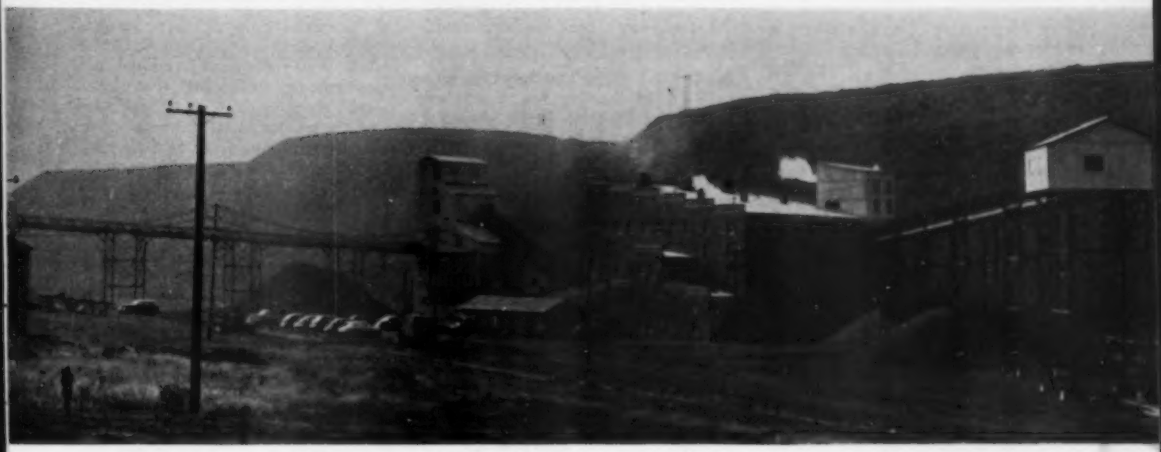
The new screening and batching plant of Albuquerque Gravel Products Co., Albuquerque, New Mexico. The excavating unit is a Sauerman 4-cu. yd. drag scraper operating on a 500-ft. span.

SAND AND GRAVEL

The 1949 distribution of production in the sand and gravel industry probably followed closely the pattern in 1948, when 73 percent of the total production was supplied by commercial plants and 27 percent by federal, state, county and municipal governments. In that year California was the largest producer, with Michigan, Wisconsin, Illinois, New York, Ohio, Texas, Minnesota, and Pennsylvania following in that order. In 1948 these nine states, each with an output of more than 12,000,000 tons, accounted for 51 percent of the total production.

The largest production gain shown in the PIT AND QUARRY survey occurred in the Midwest, where the

New crushing and screening facilities installed in 1949 at the Irwindale, Calif., plant of Consolidated Rock Products Co. jumped capacity to 1,000 t.p.h. The company operates six other plants in the Los Angeles area.



One of the largest of the new lightweight aggregate plants reported by Pit and Quarry in 1949 was Lehigh Materials Company's fine installation at Lansford, La.

average increase over 1948 was approximately 9 percent. Production in both the West and South was up about 2 percent, but the East showed a drop of almost 3 percent. However, the latter figure was based on a somewhat smaller sample than the others, and could well be off in either direction.

Selling Price We asked producers to list the average selling price of their products as of January 1 and November 1, 1949. In general the information received indicates that prices were quite stable, although a few modest reductions were noted. The average for all the producers who furnished data showed a drop of less than one cent per ton. Only one section of the country showed increased prices—the Midwest, where the average increased 1½ cents per ton.

The value of sand and gravel produced in 1949 was approximately $257,000,000, as compared with $252,944,000 in 1948, basing the 1949 figure on an average value per ton of 79 cents. The average value of prepared material was about 94 cents per ton, as compared with 54 cents for unprepared material.

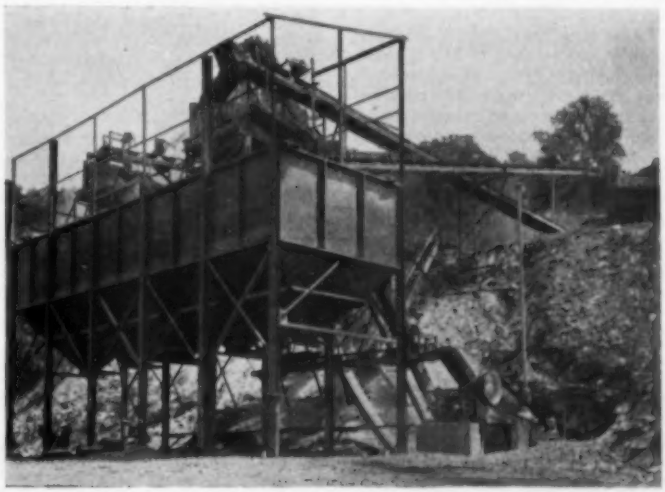
Wages Hourly wage rates increased only 1.6 percent in the first ten months of 1949—from $1.22 to $1.24. In the East the average wage reported increased from $1.36 to $1.39, in the Midwest from $1.21 to $1.39, and in the South from $0.96 to $0.99. Data from Western producers showed wage rates unchanged at $1.24 per hour. In all cases hourly wages reported by producers who replied to our questionnaire were higher than the recently enacted 75-cent minimum wage.

Production Costs Sixty-four percent of our informants stated that their production costs had increased measurably during the first ten months of 1949. The average increase reported was just over 8 percent. Only 9 percent of the questionnaires indicated any reduction in costs for the 10-month period, and the remainder stated that costs were unchanged. The reductions reported were generally under 5 percent.

Productive Capacity Average hourly productive capacity of the plants for which data was submitted showed an increase of about 7 percent during the first ten months of 1949. This modest jump was distributed rather uniformly throughout the major geographical divisions of the country. Since the survey data did not take account of productive facilities abandoned or scrapped during the year, in all probability the average increase for the entire industry was not over 5 percent.

Average hours of operation per plant showed a slight drop in the first ten months of the year—from 1680 hours in the corresponding period of 1948 to slightly under 1620 hours.

Outlook We asked producers to indicate whether demand for their materials would increase, decrease, or remain about the same in 1950. Almost 30 percent of the replies referred to increases ranging from 5 to 50 percent, with 20 percent representing a fair average.



General view of the crushing plant at the recently-opened Paul Garbart quarry at Coolspring, Pa.

Over 35 percent of our informants expect the demand for their materials to drop somewhat from the 1949 level, and the remainder believe that there will be little change.

The same conservatism was evident in regard to plans for expanding existing plants or building new ones. Only 7 percent of the questionnaires mentioned the possibility of building new plants, and an additional 9 percent mentioned expanding the capacity of existing facilities.

CRUSHED STONE

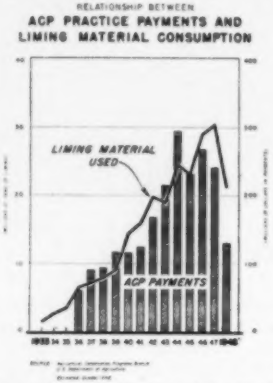
As reported by producers to the U.S. Bureau of Mines, the 1948 output of crushed and broken stone totaled 223,863,780 short tons, valued at $280,960,000, an increase of 9 percent in quantity and 13 percent in value, as compared with 1947. Crushed and broken stone used for concrete aggregates and railroad ballast accounted for 62 percent of the total output in 1948, and for probably a slightly higher percentage of the estimated 235,000,000 tons produced in 1949. Approximately 90 percent of the crushed and broken stone used for concrete aggregate was produced by commercial operators and 10 percent by government agencies.

Metallurgical uses, which took 16 percent of the total crushed and broken stone in 1948, probably accounted for a slightly smaller proportion in 1949, due to the widespread steel strikes. Limestone for agricultural purposes, which accounted for about 9 percent of total tonnage in 1948 (approximately 21,000,000 short tons), may have gone up one or two percent points as a result of late fall shipments.

Areawise, the largest production gain shown by the PIT AND QUARRY questionnaire for 1949 occurred in the Midwest, where producers showed an average gain of about 9 percent in the first ten months of the year. Gains in other sections of the country were considerably smaller, but were fairly uniform for all the states for which data were available.

Selling Price In general the information submitted on selling prices indicates little change throughout the first ten months of 1949. The average for all producers covered by the survey dropped from $1.46 per ton on January 1 to $1.45 per ton on November 1. This modest decline showed up in every state for which data were available. Notwithstanding the slight decline in prices, it seems likely that the value per ton may have continued the steady rise which has been noted each year since 1940.

Wages Average hourly wages rose in the first ten months of 1949 from $1.09 to $1.10, showing in most areas about the same stability as prices showed. In the East the increase was from $1.16 per hour to $1.18 per hour, in the Midwest from $1.08 to $1.09, and in the South unchanged at $1.01 per hour. In general all reported hourly wage rates were conformably in excess of the 75 cent minimum wage.



This graph shows the close relationship between actual liming material consumption and A.C.P. practice payments.

Production Costs Sixty-one percent of our informants in the crushed stone industry stated that their production costs had gone up in the first ten months of 1949. The average increase was approximately 7 percent, but there were extremes of as high as 20 percent. Only 6 percent showed unspecified reductions in over-all costs, and the remaining 33 percent indicated no material change either way.

Productive Capacity The hourly capacity of the plants covered by the survey increased a little over 6 percent from January 1 to November 1, 1949, and this showing was surprisingly uniform in all areas except the South, where the jump was closer to 8 percent. Although a part of the increase was accounted for by new plants, in most cases it showed up in the questionnaires on relatively minor increases in the output of existing plants.

Outlook The stone producers were somewhat more optimistic than sand and gravel producers in regard to the outlook for 1950. Over 60 percent predicted an increased volume of business, and only 6 percent thought that volume might decline a little from the 1949 level. The remainder straddled the question by indicating that 1950 would about equal 1949. Those who thought output would increase gave estimates ranging from as little as 2 percent to as much as 20 percent, with 9 or 10 percent representing a fair average. A few prophets of doom predicted that their business would drop 50 percent or more in 1950, but in general those who forecast a drop in business did not specify the amount.

Plans for expanding plant capacity in 1950 were mentioned in 24 percent of the replies, and 10 percent referred to the possibility of building entirely new plants during the year. In regard to both plans for expansion and anticipated future demand, Midwestern producers were the most optimistic group.

AGRICULTURAL LIMESTONE

The survey returns provided too little specific information on agricultural limestone production for any clear picture of how that important branch of the crushed stone industry fared in 1949. Early in the year there was widespread hope that with the substantial restoration of A. C. P. funds the total tonnage delivered in 1949 would approach the 1947 level. However, there were reports in the Fall of the year that the demand for agstone in some areas was quite sluggish, undoubtedly a direct result of reduced farm income.

Weather conditions, which favored spreading operations right up to the closing weeks of the year, undoubtedly helped to pull up total sales, but it seems highly doubtful that the 1947 level was reached. A fair estimate of the industry's showing in 1949 might place the total volume at 23,500,000 tons.

LIGHTWEIGHT AGGREGATES

There was considerable activity in 1949 in the building of new plants for the production of lightweight aggregates, and as a result total production undoubtedly reached new peak levels. As so often happens during a period of rapid expansion, no reliable figures were available on which to base even the wildest estimate of total output.

As the result of new plant capacity there was an appreciable let-up in the shortages which have existed in recent years in many sections of the country. However, certain parts of the Eastern Seaboard, where cinder reserves are dwindling at an alarming rate, are still critical areas in which considerable quantities of manufactured lightweight aggregate can be marketed.

Production of Nonmetallic Minerals Remains at High Level Through 1949

Outlook For 1950 Equally Optimistic As High Consumer Demand Continues

BY HAROLD R. DRIMILLA

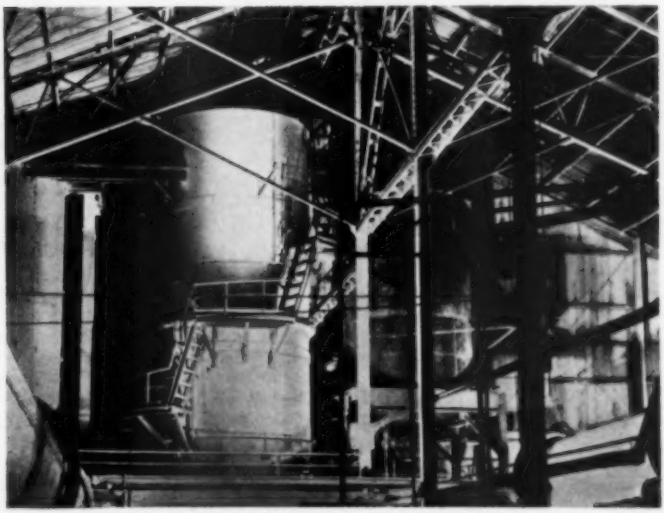
ACTIVITY in the nonmetallic minerals industry as a whole —exclusive of cement and aggregates, which are dealt with individually in this issue—continued at a high level during 1949. With no apparent slack in momentum, production bids fair to closely approximate, and in a limited number of instances surpass, the long list of all-time records established during the previous year. While final official figures are not as yet available, preliminary reports, plus reliable information direct from producers, are convincingly indicative in this respect.

In 1948 new all-time peaks were achieved in the production of asbestos, ball clay, bentonite, blast furnace slag, calcium chloride, fuller's earth, gypsum and gypsum products, kaolin, lime, phosphate rock, potash, pyrophyllite, salt, ground soapstone, sulphur, talc and such abrasives as quartz, ground sand, sandstone, pumice and pumicite. The average increase for these industries over 1947 was slightly in excess of 17 percent, paced by the production of asbestos, which registered an increase of 48 percent. Bauxite and bromine produced during 1948 was somewhat less than in 1947, but considerably above any other previous year. Overall production for the industries totalled approximately 223,863,800 tons, 9 percent over 1947 and another all-time record. In addition, 55,000,000 tons were produced for the manufacture of cement and another 15,000,000 tons for the manufacture of lime, making an aggregate total of about 295,000,000 tons.

With the exception of bauxite, gypsum and gypsum products, phosphate rock and sulphur, all of which showed a slight dip in production during the first two quarters of 1949, the overall picture for the nonmetallic industries continues to reflect the upward trend which began in 1946. The production total for the industries as a whole in 1949, it appears at this time, will be slightly less than that of the previous year. Prospects for 1950 are about the same.

The largest domestic producer of bauxite was hampered during 1949 by strikes which lasted nearly two months. In the case of the other industries showing a lag during the first six months, a substantial reversal of this trend during the latter part of the year is entirely plausible, in view of the plant expansion and construction programs which continue at high level throughout all branches of the industries.

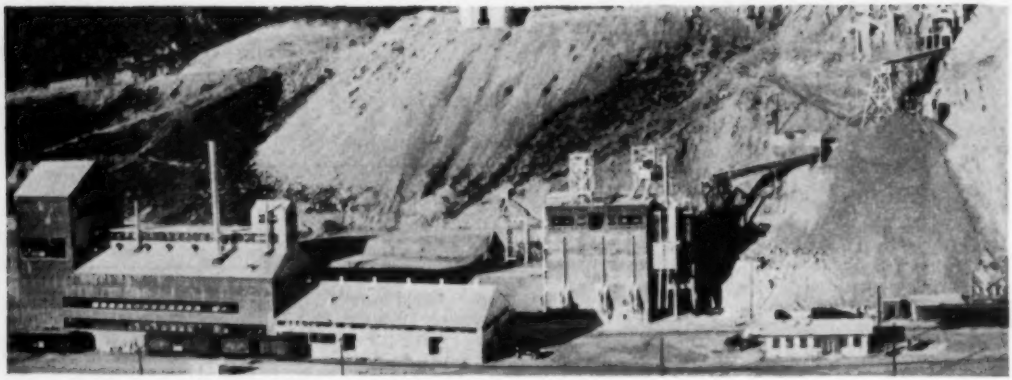
New plant construction was marked by the erection of installations of outstanding engineering design, incorporating the latest advancements in operational economy and high production capacity. These same principles motivated the many modernization and expansion programs which were evident throughout the United States, Canada and Mexico. Particularly impressive plants were built in the feldspar, fluorspar, gypsum and gypsum products, lime, phosphate, pumice, rip rap, roofing granules and silica sand industries.



• FluoSolids reactor installed at Adams, Mass., plant of New England Lime Co., where lime is being made commercially by fluidization.

Lime Production of lime is difficult to estimate, since the only figures available during the year are those which the National Lime Association receives from its its members. The unusually high current of activities in this industry justify the prediction that a new production record, representing an increase of from 6 to 8 percent, is in the offing. This statement, supported by N. L. A. reports, January through August, confronts the fact that in 1948 a record total of 7,263,976 tons of open-market lime was produced, a 7 percent increase over the previous high of 6,778,979 tons in 1946. In this case PIT AND QUARRY had conservatively forecast a 3 percent gain.

A generous number of new plants and numerous improvement programs augmented the industry's productive capacity in 1949. Probably foremost among the new plants was the gas-fired shaft kiln plant con-



• Granules Plant of 3M Co. at Corona, Calif., which is rated at 100,000 tons annually.

structed by the Kelley Island Lime and Transport Company at White Rock, O. (See PIT AND QUARRY, May, 1949, pp. 94-97.) Here four Azbe-designed forced-draft center-burner kilns are outperforming the shaft kilns of the old installation at a 5 to 1 ratio. Another important new installation was the rotary lime kiln plant operated by the City of Miami at Hialeah, Fla. (See PIT AND QUARRY, May, 1949, pp. 106-118.) A very significant development in the Mexican branch of the industry came when Calidra, S. A., and Cal de Apaxco, S. A., announced that construction was underway on a large-capacity rotary kiln plant near Apaxco, Mexico. The plant will rank among the largest and most modern in Latin America.

Typical of the widespread expansion and improvement programs were the installation of a new Ellernan calciner at the Utah Lime and Stone Company's plant at Dolomite, Utah, and of new rock loading facilities at the Hannibal, Mo., plant of the Marblehead Lime Company. The Rockwell Lime Company of Chicago bought out the Allwood Lime Company, which was adjacent to the former's plant at Manitowoc, Wis., as part of an extensive expansion and modernization program.

Gypsum Official preliminary reports for the first three quarters of 1949 point to a moderate dip in the production of gypsum and gypsum products from the all-time record established in 1948, when the output of crude gypsum reached 7,044,447 short tons. This was almost 800,000 tons over the previous record of 6,208,216 short tons in 1946. At mid-year, indications were that the normal seasonal increase in most types of construction during the third quarter and an expected increase in home building would give added impetus to the industry. Because of the numerous uses and by-products involved, the only suitable basis for comparison is the tonnage of crude gypsum mined in the United States and imported. Crude gypsum mined in the United States during the first three quarters of 1949 amounted to 4,670,416 short tons, as compared with 5,217,770 short tons in 1948, a decrease of 10 percent. Importation of crude gypsum showed a decrease of 5 percent, the total for the first half of 1949 amounting to 1,858,984 short tons.

Western Gypsum Company's new and modern plant at Sigurd, Utah, contributed significantly to the industry's productive capacity. Columbia Gypsum Products, Inc., announced that it had embarked on a $200,000 expansion program at its Greenacres, Wash., installation. A gypsum grinding and plaster plant is included in the project. In a move to increase production to meet growing demands in the West, Henry J. Kaiser took over the Redwood, Calif., gypsum products plant formerly operated by the Pacific Portland Cement Company. An extensive modernization program will be carried out under the new management.

Phosphate Total mine production of phosphate rock, according to preliminary reports, was 4,056,168 long tons for the first half of 1949. Comparing this with the record 9,388,610 long tons produced in 1948, a decrease of about 13 percent for the entire year would prevail, provided that the production level remained static during the remaining six months.

A major development in the phosphate industry, which doubtlessly will prove a heavy factor in the production trend for the last half of 1949, occurred when three leading firms, the Anaconda Copper Mining Company, the San Francisco Chemical Company, and the Simplot Fertilizer Company combined efforts to engage in a mammoth open pit operation on the Fort Hall Indian reservation, 12 miles north of Pocatello, Idaho. This project will envelop a series of deposits extending almost to Yellowstone Park. Combined, they are estimated at 8,000,000,000 tons of phosphate ore, nearly 60 percent of the nation's supply. (See PIT AND QUARRY, July, 1949, pp. 161-162.) The re-opening of a long abandoned deposit in the Hull district of Quebec was a highly significant Canadian development. It is anticipated this source will supply 1,000,000 tons of phosphate rock.

Roofing Granules Production of roofing granules, which in 1948 showed a decline of about 10 percent from the all-time record of 22,724,471 short tons established the previous year, apparently will show an upswing during 1949. Although no official reports have as yet been released, the industry, spurred by increased consumer demand, will quite likely outproduce the 1948 figure of 20,977,831 short tons. A similar trend may be looked for during the coming 12 months.

Outstanding among the improvement and construction programs in this field was the completion of the Minnesota Mining and Manufacturing Company's strategic Corona, Calif., installation. The plant, rated at 100,000 tons of finished granules annually, was in full production at the outset of the year. (See PIT AND QUARRY, February, 1949, pp. 68-72.) This constituted the latest link in a chain of similar operations by 3M

• Feldspar Flotation Corporation's new plant at Spruce Pine, N. C.

and followed closely upon the completion of their 250,000-ton plant at Little Rock, Ark. Similar activities on a smaller scale were apparent among other producers.

Natural Abrasives Paced by activities in the pumice field, abrasive materials production appears in a favorable light for a new record in 1949 and a continued rise during the coming year. In 1948 quartz, ground sand and sandstone, and pumice and pumicite achieved all-time production peaks, while garnet and emery each declined moderately. Tripoli declined 22 percent. No comparison of diatomite is possible, since publication of current production figures is not permitted. The tonnage figure for quartz in 1948 was 161,861 short tons, pumice and pumicite 607,746 short tons and ground sand and sandstone 702,572 short tons. The overall gain for these over 1947 was in excess of 21 percent.

One of the most important of the new operations in the natural abrasives industries was the tapping of the rich deposits at Pumice Mountain, seven miles from Calipatria, Calif., by the Builder's Supply Corporation of Phoenix. This deposit is believed to be the largest in the United States. Another highly noteworthy development was the Pumice Aggregate Sales Corporation's operation in the Jemez Mountains of New Mexico. (See PIT AND QUARRY, December, 1948, pp. 129-131, 140.)

Fluorspar While preliminary reports on fluorspar production for 1949 are lacking, indications from producer activities in the field are such that a gain over 1948 may be expected, with an equally optimistic outlook for the coming year. Fluorspar production apparently dipped slightly in 1948, the total output being an estimated 325,000 short tons, as compared with the official figure of 329,484 short tons for 1947.

Asbestos A continued high output of asbestos is expected to be revealed when figures for 1949 are published, with the same in prospect for 1950. This industry set an all-time record in 1948, producing 37,237 short tons, a remarkable increase of 48 percent over the previous year. Since asbestos ranks high on this country's critical import list, the rapid advance of domestic production is a bright mark on the national industrial horizon. Canada, world's leading producer, also is making strides toward increasing production, as was revealed in the announcement by Johns-Manville Corporation of the development by that firm of a new mine near Lake Larder, Ont. The deposit is expected to increase Canadian output materially.

Bauxite Mine production of bauxite totalled 816,149 long tons during the first three quarters of 1949, as compared with 1,118,295 tons during the corresponding period of 1948. The final official figure for the latter year reached 1,457,148 long tons, a gain of 27 percent over the previous year and the highest annual total since the war year of 1944. Indications here are that the upward curve in production is flattening off at the 1947 level and will remain static, within reasonable limits, throughout the calendar year ahead.

Sulphur Production of sulphur, January through August, 1949, amounted to 3,169,308 long tons, just about 90,000 tons less than for the similar period of 1948. The differential here is so slight that it appears safe to predict that 1948 all-time record of 4,869,210 long tons will at least be approximately equalled and, in view of the industrial upturn during the autumn of last year, is definitely in jeopardy of being surpassed. Sulphur recovered from industrial gases has increased about 25 percent. Recovery from brimstone, sludge and paste has also increased, but to a substantially lesser extent.

Others Latest available production figures on the other nonmetallic minerals are those of 1948. Branches of the industry which established all-time records include the following: bentonite, 920,566 short tons, 21 percent over 1947; calcium chloride, 301,936 short tons; ball clay, 298,797 tons, 100,000 tons more than the previous record in 1941; fuller's earth 342,081 tons; kaolin, 1,568,848 short tons, 10 percent over 1947; potash, 1,139,881 tons (K_2O); salt, 16,403,293 short tons; blast-furnace slag, 21,131,000 short tons, an 8 percent increase over 1947; and talc, pyropholite and soapstone, 518,746 short tons. Barite dipped slightly from 1947, but remained in excess of all other years with 777,481 short tons, as did boron minerals (450,932 short tons, gross weights and bromine (90,338,555 short tons, gross weight). Production of magnesite and other magnesium compounds was appreciably greater than in 1947, with refractory magnesia setting an all-time high of 330,069 short tons. Output of slate declined 9 percent in quantity to 876,010 short tons, while sodium sulphates, which rose to record height ealy in the year, slackened off in the later months.

The feldspar group was particularly active in new construction and improvements, most important in this respect being the Appalachian Minerals Company's development of the rich Georgia deposits in Jasper county near Monticello. (See PIT AND QUARRY, Oct., 1949, pp. 65-67, 74.) The Feldspar Milling Company and the North Carolina Feldspar Corporation, together with TVA and North Carolina State College, combined to make an important contribution to the industry in the form of a new feldspar flotation process plant at Spruce Pine, N. C. (See PIT AND QUARRY, Dec., 1949, pp. 55-57.) The Consolidated Feldspar Company of Canon City, Colo., upped production to 300 tons per day. Activities in other of the nonmetallic minerals industries were paced by the construction of a new silica mill by Oak Ridge Minerals, Inc., at Rogers, Ark., and the forming of the Rare Earths Development Company for the processing of monazite sands at McCall, Idaho.

A.I.M.E. Sessions at San Francisco Cover Wide Variety of Subjects

ON THE SPOT

THE annual fall meeting of the American Institute of Mining & Metallurgical Engineers (Southern California Section) brought together a large group of industrial-minerals engineers and other interested individuals from that area for

By HARRY F. UTLEY

the two-day gathering, held October 20 and 21 at the Elks Club in Los Angeles. Chairmen at the technical sessions included R. M. Stewart and L. A. Norman Jr. (California Division of Mines), J. L. Bruce (Cyprus Mines Corporation), E. J. Mayhew (Great Lakes Carbon Corporation), and T. O. Evans (A. T. & S. F. Railway). Socially, the registrants joined with the Metals and Petroleum groups, which met concurrently, for luncheons at the Town House and a dinner-dance at the Los Angeles Biltmore.

Displacement Separation — The continued and growing interest in the broad field of displacement separation of minerals made a paper on this subject by H. F. Lynn of the Southwestern Engineering Company, Los Angeles, of top interest. The author reviewed extensively present practices and predicted future trends in sink-float methods of beneficiation. At the outset, and in view of the widespread application of the term "heavy-media separation" to that process licensed by the American Cyanamid Company, it was suggested that this term be used solely for this licensed process, and "sink-float separation" was proposed as a general term for all the various means of accomplishing separation by displacement.

First attention to sink-float methods was seen in the early German efforts in World War I which utilized suspended solids in water and also applied it to the cleaning of coal. After a decade of development and application in coal washing, broader practical applications were made by C. E. Wuensch in the early 'thirties. Developments since that time have been rapid, and numerous investigators have contributed to the theory and widened the field of application.

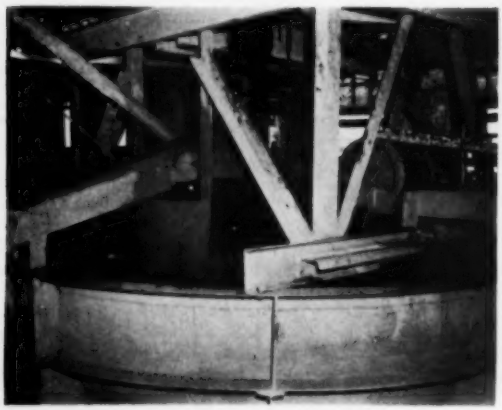
After years of investigation of the most suitable materials to be used as exogenous media, present investigations are being directed toward autogenous media as a means of reducing operating costs. In earlier years plants were built using equipment not specifically designed for sink-float processing. Now, as the optimum in density control is being rapidly approached, present developments are in the field of three-part separations, thus following the historic pattern of antecedent mineral beneficiation methods.

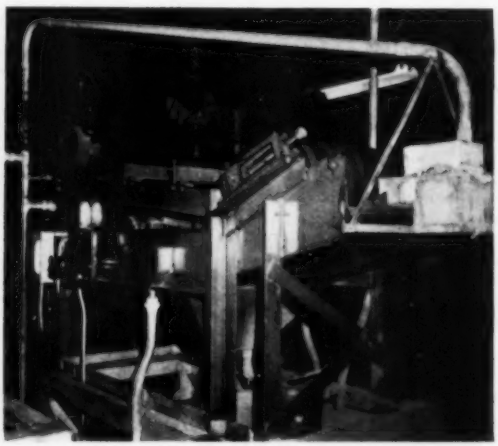
While operating costs vary considerably with the processors, the media used, the efficiency of design, and the magnitude of the operation, large-scale operations can and do achieve costs of less than 10 cents per ton of feed, the paper pointed out. Early capital expenditures reached as much as $100 per ton per day. With improved design and a better understanding of equipment capacities, capital outlay has now been reduced to as low as $35 per ton per day, and equipment presently being designed will further reduce this cost. Of the equipment items, major costs are for those devices which reclaim the medium, and developments in this line are receiving major attention. Scrubbing the products free of adhering media by better methods than the sprays and screens currently employed will be performed by devices occupying less floor space and introducing less unwanted water into the circuit, in Mr. Lynn's opinion. The removal of deleterious slimes will be accomplished by less costly means. Equipment designers are now at work on this problem.

Sink-float processes can be applied to any material—even water-soluble material and those damaged or altered by exposure to water—by interposing a fluid of intermediate specific gravity between the material to be saved and the material to be rejected, in sizes ranging from 10 mesh to 8 in. Sizes down to 48-mesh can be handled by special manipulation of the cleaning circuit.

• Right: The magnetic separator used for recovery of ferro silicon used in an Illinois fluorspar heavy-media installation.

• Below: A 14-ft. cone separator in the heavy-media separation department of the same plant.



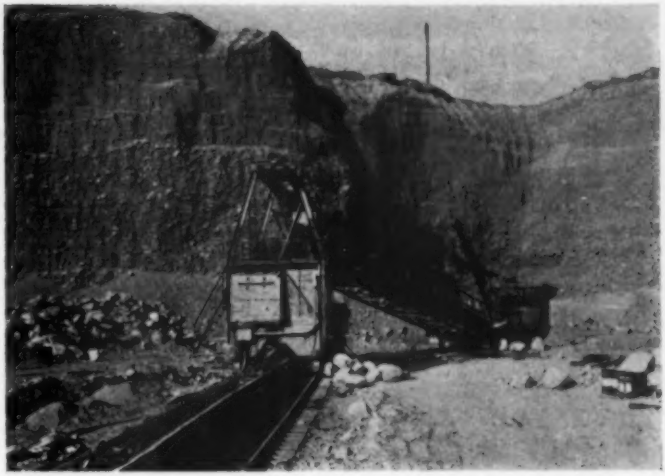


Los Angeles County Plants — A cross-section of the sand and gravel industry in Los Angeles County, the largest concentration of production capacity in the United States, was presented in a paper by H. E. Lowe, who has been a sales engineer in the excavating industry in southern California for 20 years, first as district manager of the shovel-and-crane division of the Lima Locomotive Works and more recently with the Bucyrus-Erie Company.

The first modern mechanized plant in the county was erected about 1909 by the Pacific Rock & Gravel Company, near Azusa in the San Gabriel Valley. Today there are about 20 major producing plants with capacities ranging from a few hundred to 1,000 t.p.h. Two of these are in the Palos Verdes Hills, the remainder being divided between the San Fernando and San Gabriel Valley areas. The deposits of the former are in the alluvial fan of the Big Tujunga; the latter in the alluvial fan of the San Gabriel River mouth.

Back in 1912 total production of the plants in existence was less than 600,000 tons annually. Three years later, total annual capacity reached 1,000,000 tons. By 1925, annual output reached 10,000,000 tons and the industry continued to maintain that capacity until the post-war years when it was again increased. In 1948, actual production and sales climbed to a record 12,000,000 tons.

Production methods have become quite standardized, due to the similarity of occurrence of the materials and to interchange of ideas among the operators. Large power shovels are used almost exclusively for excavating. Banks as high as 100 ft. are worked. These high faces present an excavating problem. Draglines and special scarifiers are employed to slope the banks and make them safe for the shovels. This practice improves the uniformity of the raw material being excavated.



• A typical sand and gravel pit near Los Angeles, showing the vertical bank, shovel, hopper and conveyors.

Conveyors, trucks, and railway cars are used for pit-to-plant transportation, Mr. Lowe pointed out. Use of a large-capacity surge pile of raw material, with tunnel recovery belts leading to the processing plant, has become standard practice in the larger plants, these storage piles usually containing sufficient material to allow the washing and screening departments to operate as long as a week without dependence on the pit operations. A number of plants also use pendulum conveyors to follow the shovel and feed the primary crusher stationed at a convenient central point on the floor of the pit.

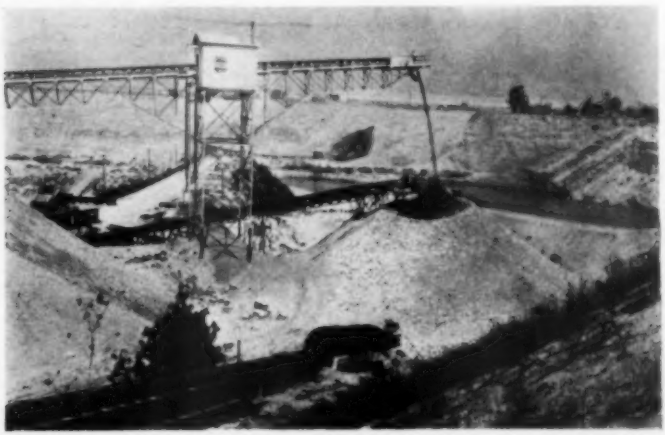
A wide variety of sizes is in demand. There are five sizes of crushed material ranging from 3½ in. down to dust, five or six gravels from 2½ in. to ¼ in., and both washed and unwashed plaster and concrete sand. Currently there is a large demand for No. 4 crushed gravel in the ⅜- to ⅛-in. range. Water requirements for washing are almost identical with production; in other words for each 1,000 tons of material washed, the equivalent of 1,000 tons of water is needed.

Selling prices, f.o.b. plant, currently run from 65 cents to $1.00 per ton for crushed and uncrushed gravel, and from 65 to 75 cents for sand.

Other Papers—F. H. May and M. L. Leonardi of the American Potash & Chemical Company presented a paper outlining the new Trona carbonization process for the manufacture of soda ash from the natural brines of Owens and Searles Lakes in California.

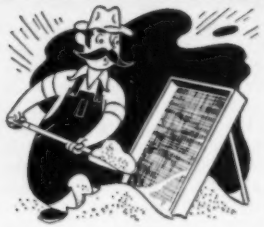
While the most important pyrophyllite deposits in the United States have been in North Carolina, a new deposit near San Diego, Calif., is providing considerable quantities of material, according to Dr. J. F. Lance, who heads the new department of geology at Whittier College, Whittier, Calif. In a paper covering this occurrence, Dr. Lance reported that this mine, located near the town of Escondido, has recently produced

(*Continued on page* 138)



• Another typical Los Angeles installation, showing old and new conveyors to the raw surge pile, with the reclaiming conveyor to the plant at the left.

Screenings



by William M. Avery

OUR vague notion that some special phenomena would attend the arrival of the year 1950 has gone glimmering. People had hangovers, made resolutions, suffered head colds, smashed automobiles, got born, and cashed in their chips with much the same slaphappy abandon displayed on other New Years. So far as we could judge, the half century that spawned the automotive age, the airplane, two World Wars, the Great Depression, radio, television, and finally the atom bomb, sputtered out like a penny firecracker with a bum fuse. All things considered, perhaps it was just as well. After so much sound and fury, a brief intermission at half-time should be welcome.

Coals to Newcastle

WE thought we had disposed of the Blarney Stone question last month, but it has bounced right back. Some bright lad flew a 15-pound chunk of limestone, alleged to be a chip off the original block, from Ireland to San Francisco,

where several hundred sons and daughters of Erin lined up to kiss the thing at two bits a smack. After $472 worth of osculation the stone disappeared mysteriously, and some dark hints were thrown around that the whole business was a hoax. Unfortunately most of the customers had been women, so there was hardly a fair opportunity to determine whether or not the stone had any quantitative effect on the gift of gab.

Anyway, a statement by the guardians of the real Blarney Stone at County Cork, Ireland, seemed to settle the matter pretty conclusively. They said the San Francisco stone was unquestionably a sham rock. Sure, and if that's a fair sample of the kind of gab imparted by the Blarney Stone, we hope they keep the dratted thing over there!

Maybe They're Republicans

THIS fascinating news item appeared in the *Washington Post* not long ago: "Two men, one a former convict, were arrested yesterday and charged with housekeeping, and police were trying to figure out what they were doing with dynamite and a blasting cap found when they were arrested."

They could, of course, have been on the verge of breaking up housekeeping, or perhaps, as the *New Yorker* suggests, they were just getting ready to clean out the hall closet. What we *really* want to know is, how long can they keep you in the clink for housekeeping?

Private Enterprise

ANOTHER item in the crime field comes from Philadelphia, where a guy was arrested the other day for stealing a 20-ton truck crane. The law ignored his explanation that he was considering going into business for himself. This just goes to show how discouragingly difficult it is to go into business nowadays.

Divvy

THE Treasury reports that if all the money in circulation on October 31, 1949, were divided equally among the population, your personal share would be $182.58. Since there hasn't been any indication of when the checks will be mailed, maybe you'd better hang on to that two-dollar bill you've been hoarding.

The Egg and Sam

IT has been called to our attention that we were unduly harsh in our comment about Uncle Sam's egg storage project, and we are glad to set the record straight. Seems that out of the 58,000,000 pounds bought and stored away last year, 6,000,000 pounds have been resold at approximately half of the original purchase price. Apparently the old boy can still drive a shrewd bargain when the need arises.

Speed Demons

FROM Mojave, Calif., comes a report of a new record for jackhammer drilling. A two-man crew set up, drilled through 36 in. of solid rock, and dismantled, all in five minutes and one second, or sixteen seconds under the old record. We suppose that odd second crept in when one of the guys paused to scratch.

Cosmic Monkey Business

A self-styled "soothsayer" from Richmond, Va., claims that he has realized a six-figure annual income for a number of years from the sale of "Lucky Stones" to local Negroes. Seems he uses a fleet of 13 airplanes to fly ordinary rocks into the substratosphere, where they acquire trouble-shooting properties through contact with cosmic rays. The stones sell for a dollar each,

with no discount for quantity purchases.

Before a United States District Court this enterprising stone producer described his business as "research" in the substratosphere. "What I'm looking for," he said, "is something that will end all your troubles, yet small enough to fit into your watch pocket."

Something on the order of a capsule of arsenic or potassium cyanide, maybe?

Overall view of Consumers Company's Algonquin plant as seen from the catwalk of the conveyor leading to the steel loading bins.

Engineered For Efficiency

BY

HAROLD R. DRIMILLA

Consumers Company of Chicago Expands Operations With New And Well-Designed Plant At Algonquin, Illinois

WITH the installation of five steel loading bins designed to accommodate both railway and truck delivery, Consumers Company of Chicago has just about completed construction of its newly-acquired 300-ton-per-hour sand and gravel plant, located approximately 1½ miles northwest of Algonquin, Ill. Accompanying conveyors and screening and washing facilities are in place. A new one-way truck entrance from the northwest, when finished, will place the plant on a full operating basis, as compared with the limited production schedule during the summer and fall months of last year to accommodate crane-loaded railway delivery.

Work on the plant, originally the property of the Elmhurst-Chicago Stone Company, commenced with the initial pouring of concrete in September of 1948 and the erection of timber framework the following month. Negotiations by Consumers Company for the purchase of the plant began during the latter part of November, 1948, and the transaction was completed about May 1, 1949. Since then the new owners have directed construction.

The plant will serve market areas by railway along the Chicago and Northwestern line north from De Kalb, Ill., to the Wisconsin border

• Primary crushing operations, showing a truck discharging into the plant hopper, the belt conveyor to the scalping screen, the primary crushers and the recirculating belt conveyor. Discharge-end of the recirculating belt from the secondary roll crusher is seen in the right foreground.

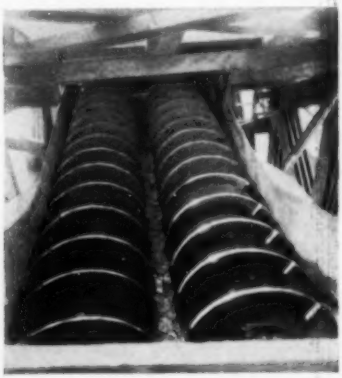
and by truck to other points within a radius of 40 to 50 miles. Consumers Co. is thus adding another important link to its strategically-located supply chain and is thereby substantially supplementing the output of aggregates presently stemming from its stone plants at Bellwood and McCook, Ill., and Ives, Wis., and from gravel plants located at Crystal Lake, Fox Lake, South Beloit and Lacon, Ill., and Afton, Wis.

Considerable engineering forethought was put into practice in the construction of the Algonquin installation, as is apparent in the highly efficient screening and sizing facilities throughout and the elaborate conveyor system interlocking all operations from the plant hopper to the loading bins. Two-point, electric-motor control of the entire plant gives ample evidence of the advance in operating efficiency and employee safety precautions incorporated in modern methods and design.

At present the quarry extends from about 300 yds. west of the processing plant to a distance of approximately 1,000 yds., then straight south about ½ mile. Future operations will extend the quarry another 1,000 yds. west, with the possibility of branching out to the north. The area comprises 410 acres in all.

Overburden, ranging from 2 to 10 ft. is removed on a contract basis. Equipment involved to date has consisted of a Northwest 1¾ cu. yd. dragline and 4 Hendrickson six-wheel trucks with 10-cu. yd. rear-dump bodies. The face of the pit, which rises in height from 20 to 30 ft., is worked by a Lorain 75, equipped with a 1¼-cu. yd. shovel. An Allis-Chalmers HD-7 front-end loader assists and cleans up around the shovel. Raw material is hauled to the plant hopper in 2 six-wheel drive, 12-cu. yd. Mack rear-dump trucks. Eventually, the 1¼-cu. yd. shovel will be replaced by one of 2½-cu. yd. capacity and hauling units of a heavier type and increased capacity will be used.

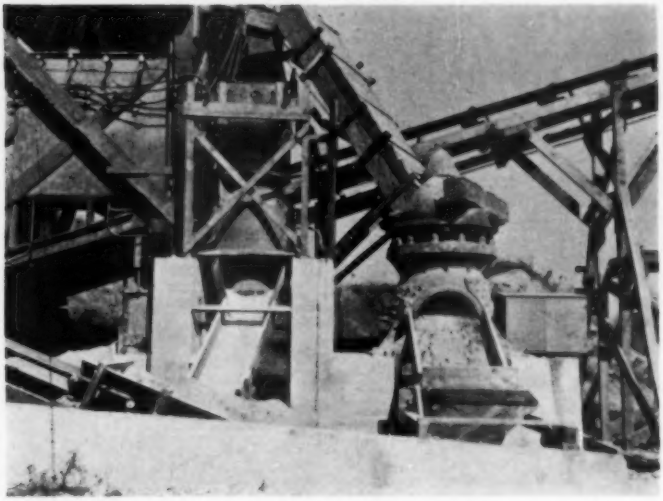
At the plant site material is unloaded by the trucks into an 80-cu. yd. hopper, with a grizzly set at 7 in., from which it falls onto a 3- by 6-ft. Telsmith reciprocating plate feeder. This discharges onto a 24-in. by 84-ft. belt conveyor leading to a 4- by 12-ft. Robins Gyrex double-deck scalping screen atop the primary crusher housing. Material retained on the first deck is fed to an Allis-



• Above: Twin-screw washers through which fines from the sand preparation machine are routed to the fine-sand stockpile.

• Left: Screening atop the wash plant is accomplished with these triple-deck screens, each equipped with four spray bars.

• Shovel working the quarry is assisted as shown by a tractor-shovel.



• The two gyratory crushers employed in the primary crushing operations.

• All passing No. 4 mesh on the triple deck screens at the wash plant goes to this sand preparation machine and thence to the coarse-sand stockpile.

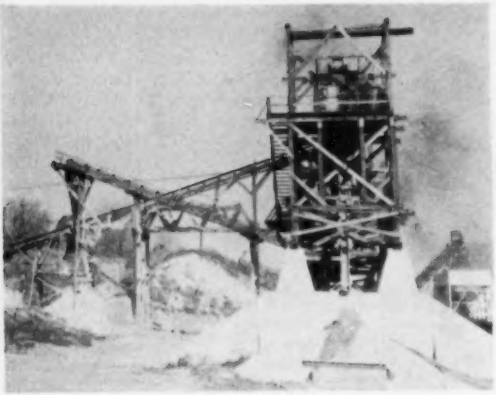
Chalmers Gates No. 5 gyratory crusher, while that retained on the second deck goes to an Allis-Chalmers Type R. gyratory crusher. Both are V-belt driven by 40-hp. Allis-Chalmers electric motors, the former at 1,160 r.p.m. and the latter at 1,200 r.p.m. Discharge from the crushers is carried on a 24-in. by 90-ft. return belt conveyor for recirculation.

Material passing the scalping screen, ranging from 1- to 1½-in., depending on the size desired, falls onto a 24-in. belt conveyor to be hauled approximately 115 ft. at an 18-degree incline to the top of the wash plant. This conveyor and the two previously mentioned were brought from the Elmhurst-Chicago Stone Company's plant at Lisle, Ill. They were manufactured by Robins and Link Belt.

Screening atop the wash plant is accomplished by two 4- by 12-ft. Telsmith triple-deck Vibro Kings, each equipped with 4 spray bars and driven by a Louis Allis 10-hp. electric motor running at 1,800 r.p.m. All passing No. 4 mesh goes into a Western Machinery Co. Wemco No. 48 sand preparation machine and thence to the coarse sand stockpile. Fines from the Wemco are passed on to a 5-ft. 7-in. by 22-ft. Eagle twin-screw washer and dropped onto the fine sand stockpile. Both machines are V-belt driven, the Wemco by a 7½-hp. and the Eagle by a 20-hp. electric motor.

Clear water for washing is pumped in by a 1,000 g.p.m. Allis-Chalmers pump from a 200-ft.-long by 50-ft.-wide by 25-ft.-deep reservoir located immediately northeast of the stockpile wall. The reservoir is stream fed, plus return water. Waste water is gravity-fed into a 10,000-gal. tank, from which it is pumped by 1,000-g.p.m., 40-hp. Allis-Chalmers solids pump into an 8-in. pipeline and emptied into a slough northwest of the plant.

Everything passing ⅜-in. and retained on the No. 4 mesh of the Vibro Kings goes into a 30- by 18-in. Telsmith double-roll crusher. The return from this crusher is recirculated on a 24-in. by 81-ft. Barber-Greene steel truss belt conveyor to the third conveyor stage for rescreening. All feed over and above the volume which the rolls are designed to take is carried off in a



• Above: A rear-dump truck unloading into the 80-cu. yd. plant hopper.

• Left: Structure housing the gravel sizing operations, showing the south-end stockpile wall. Secondary crushing operation conveyors are in left background and steel loading bins at extreme right.

spiral spout which stockpiles it as pea gravel. The crusher is driven through a V-belt from an electric motor developing 40 hp. at 1,800 r.p.m.

All material on the ⅜-in. decks of the Vibro Kings is fed to another Barber-Greene steel truss belt conveyor, 24-in. by 78-ft., and is conveyed to a 5- by 12-ft. Telsmith triple-deck sizing screen at the south end of the plant. Chute arrangements from the various decks stockpile the gravel according to size. Screens are interchanged in accordance with specifications desired. Normally, minus-2½ to 1½-in. is taken from the first deck, minus-1½ to ⅜-in. from the second and minus-1 to ⅜-in. from the third deck. Material passing completely though the screen is chuted off to the refuse pile.

Stockpiles are separated by concrete retaining walls arranged under the conveyor system from the wash plant on the north to the gravel screening facilities on the south. The distance between the retaining walls is as follows: fine sand, 30 ft.; coarse sand, 40 ft.; pea gravel, 25 ft.; minus-2½-in. gravel, 25 ft.; minus-1½-in. gravel, 25 ft.; minus-1-in. gravel, 30 ft.; and refuse, 26 ft.

Commencing at the south retaining wall, a corrugated metal reclaiming tunnel, 7 ft. in diameter, extends north under the stockpiles for a distance of 212 ft. Reclaiming is accomplished through 18 Telsmith Boquad bin gates which drop the material onto a 24-in. by 199-ft. belt conveyor. This discharges onto a 24-in. by 200-ft., inclined belt conveyor leading to the platform above the loading bins. Both conveyors, manufactured by Barber-Greene, are driven by-30 hp. gearhead electric motors.

The inclined conveyor empties onto an electric-motor-driven single-deck Telsmith Pulsator screen, equipped with three spray bars which subject the aggregates to a final washing at 100 g.p.m., under a pressure of from 20 to 30 lbs. Water for this operation is supplied and disposed of in the same manner as at the main wash plant.

From the Pulsator material is distributed on a 24-in. by 36-ft. Barber-Greene shuttle conveyor driven by a 30-hp. electric motor. Five Butler steel bins, each of 185-ton capacity, receive the finished product. The bins straddle the railway spur servicing the plant area. Chutes underneath load cars, while side chutes are used for truck delivery. The first three are equipped with 15- by 15-in. Telsmith Duplex gates and the remaining two with Simplex gates of like size. One or two will be used for storing and loading sand, depending on whether one or two grades are being stocked for delivery, and the remainder will be used for gravel.

The new truck entrance from the northwest end of the plant will flank the west side of the bins to permit one-way travel for incoming and outgoing vehicles. Outgoing traffic will circle south and east to the main road.

An important factor in the operational efficiency and all-round safety conditions at the plant is the provision for electric-motor control at two starting and stopping points. The No. 1 station controls the first two conveyors, the scalping screen,

(*Continued on page* 138)

• The railroad crane which was used to load cars from the stockpile pending completion of the steel loading bins.

• The five steel loading bins which straddle the railway spur servicing the plant. Cars are loaded underneath and trucks throught side chutes.

Report on Current Labor Developments

By S. HERBERT UNTERBERGER
Director of Research
Labor Relations Information Bureau
Washington, D. C.

THE imminent changes in the Wage and Hour Law continue to dominate the labor scene. Accordingly this "Report" will continue its discussion of the effects of the changes in the Wage-Hour Law begun in the December issue.

More About the New Wage & Hour Law

The new Wage & Hour Law goes into effect on January 25, 1950. On that date the minimum wage for employees covered by the law rises from 40 to 75 cents an hour. In addition, many of the rules which governed minimum wages and overtime payments also change.

Last month, this "Report" took up two problems of primary interest to employers: (1) whether their employees are covered by the new law and (2) the new method for computing the "regular rate" of pay. Mention was also made of the fact that the new law provides several methods for simplifying payroll accounting.

Previously an employer who wanted to pay his employees a constant wage even though their work weeks fluctuated so that they were required to work more than 40 hours some weeks and less than 40 hours other weeks found that it was almost impossible to develop a plan which would not be held to be in violation of the law. Also, if an employee worked at piece rates, or if he performed more than one kind of work during the week at varying rates, the calculation of any overtime payments became very complicated indeed. Where any of these problems exist, the new law provides a very real opportunity for simplification and cost saving.

The Problem of Fluctuating Workweeks

The new law sets forth a method for leveling out the pay of employees who must work irregular hours. The employer and the employee or his representative are permitted to agree upon any regular rate of pay not less than 75 cents an hour. The employer guarantees pay for some agreed-upon number of hours, not exceeding 60 a week, with time and one-half after 40 hours. By fixing a low hourly rate and a high number of hours per week, the weekly pay generally can be kept constant.

For example, if an employer wishes to pay an employee $70 per week — regardless of fluctuating hours—he can provide a basic rate of $1 per hour and a guarantee of 60 hours of work. If the employee works 40 hours, he gets $70; if he works 50 hours, he still gets $70 under the guarantee (his calculated rate would be only $55, including 10 hours at time and one-half); if he works 60 hours, he still gets $70 (which is equal to the calculated rate, 40 hours at straight time and 20 hours at time and one-half). Only if he works more than 60 hours will he be paid more than $70 per week. Thus, if he works 70 hours he will be entitled to $85 for 40 hours at straight time and 30 hours at time and one-half.

Now that employers may adopt this kind of constant wage plan without violating the law, they may want to investigate its use carefully. In many cases a constant wage is a more desirable method of wage payment, and it will frequently simplify payroll accounting.

Additional Opportunities for Simplifying Payroll Accounting

Under the old law, if an employee worked at piece rates or if he performed more than one kind of work during the week at varying rates, the regular rate had to be an average hourly rate for the work done during the week. For this reason, it could not be calculated until after the week was over and the performance and earnings records were all available.

The new law provides several ways to simplify the calculations. Where piece rates are used, no complicated calculation need be performed. Work done during overtime hours may be paid for simply at 1½ times the piece rate applicable to the same work during non-overtime hours.

Where an employee works at different hourly rates during the week, there is also no longer any need for a complicated calculation. Here, too, the new law provides that overtime hours may be paid for at 1½ times the rate applicable to the same work during non-overtime hours.

The new law also provides another way to handle the situation where the regular rate of pay is difficult to figure out. It permits the establishment, either by agreement or understanding between the employer and his employees, of a basic rate for a particular job. This basic rate may then be used as the regular rate for the purpose of computing overtime. There is one condition. The basic rate established must be authorized by the Wage and Hour Administrator as substantially equivalent to the average hourly earnings of the employees in the particular work over a representative period of time.

These methods offer real opportunities for simplifying payroll accounting. Care should be taken in their introduction, but the possibility of using them should not be overlooked.

Penalties Made Less Severe

Finally it is important to note that the Congress reconsidered the penalties previously established and generally made them more reasonable in comparison with the seriousness of the violation. Previously, the purchaser of so-called "hot goods" (goods produced under conditions which violate the Wage and Hour Law) who transported, shipped, delivered or sold any of them was subject to criminal penalties, even if he did not know that the goods were "hot". This harsh restriction is now greatly eased. The purchaser will suffer no penalties if he bought the goods in good faith, relying on written assurance from the producer that they were produced in compliance with the requirements of the Act. Purchasers who wish to be protected should henceforth require such written statements from their suppliers.

Under the original law an employer faced the danger of being held liable for double damages even after his employees had agreed to a settlement of their claims for some lesser sum. The new law provides that an employee may authorize the Administrator to make a binding settlement in his behalf.

Social Security Tax to Rise

Employers should be careful not to overlook the recent rise in the social security tax on payrolls. The rise went into effect on January 1, 1950. All wages up to $3,000 a year paid to a worker by each of his employers subject to the act are taxable.

Previously the contribution rate on these wages was 1 percent each from employer and employee. Now

(*Continued on page* 139)

The Construction Picture 1949-1950

By EDWARD BRUNENKANT

DURING the twelve month period which ended December 31, 1949 the U. S. spent more money for construction than it did in any other year in its history. The record breaking $19 billion spend for new homes, roads, dams, industrial buildings and so forth in 1949 was some $250 million above the previous high set in 1948. In 1949 as in 1948, however, the record breaking dollar totals of new construction did not represent record breaking physical volume. The physical volume of both these years was exceeded during the peak war year of 1942 and before that in the boom years of the late 1920's.

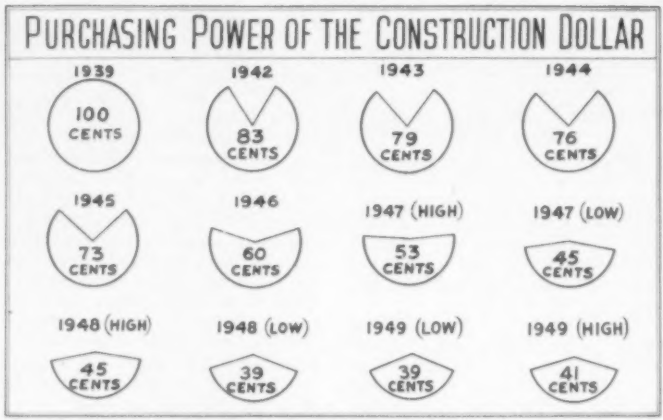
In an effort to determine those factors which influenced the construction picture in 1949 and at the same time to ascertain a reasonably accurate forecast for 1950, a questionnaire was sent to a number of statistical and fact finding organizations in, or vitally interested in, construction activity. Acknowledgment and thanks is herewith tendered to those organizations who supplied the information from which this report has been compiled. These organizations include: the American Appraisal Co., the Associated General Contractors of America, Inc., the F. W. Dodge Corp., the General Services Administration, and Standard & Poor's Corp.

General Construction Trends

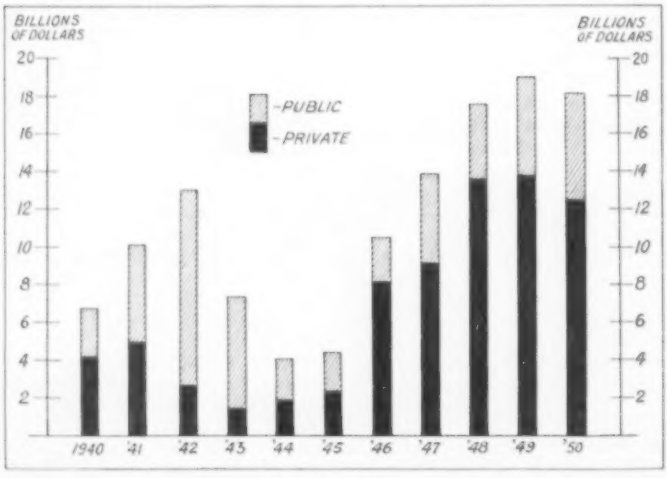
Perhaps the most significant observation that can be made, of the 1949 construction activity is that the purchasing power of the construction dollar which had decreased steadily in value since 1939 suddenly halted its downward movement and turned upwards. From a low point of 39 cents (compared to a purchasing power of 100 cents in 1939) in the last months of 1948 and early 1949, the value of the dollar steadied and then climbed to 41 cents in the last quarter of 1949. This is the first real indication that the post war inflation of construction costs is receding to levels more likely to attract and encourage builders. Further strengthening this viewpoint is the fact that competitive bidding has returned to all fields of construction. This indicates that contractors are eager for work and that a reasonable basis for computing costs without fear of overnight skyrocketing of material and labor prices is now available.

Most authorities agree that construction costs for 1950 will stabilize near current levels or perhaps decline a little. F. W. Dodge Corp. estimates that the average square foot construction costs will be 4 percent lower in 1950 than in 1949.

Of the several major fields into which new construction activity is customarily divided, residential building is normally the most important. Contrary to predictions, new dwelling starts for the first 10 months of 1949 exceeded the near record of 931,300 units started in all of 1948. Although privately-owned building activity is hypersensitive to general cyclical dips, strong elements of support are present which appear to give assurance of a prolonged period of greater than average expenditures for housing. Some of these factors are; tremendous increase in population; upturn in rents, partly reflecting the raising of rent controls; little building during the depression and again during the war years; higher consumer incomes; and a general belief that realty or



Values based upon the American Appraisal Company's Index of construction costs. This index is a composite figure computed for the construction materials and labor required for four representative types of buildings.



Dollar value of new construction in the United States for the years 1940-1950, as estimated by the Departments of Labor and Commerce.

Photo by Norman G. Wallace

New Arizona bridge on Highway 60. The bridge is of steel arch girder design with the arch measuring 350 ft. from pin to pin and 170 ft. from roadway to canyon bottom.

building costs will remain high. The basic problem confronting the building industry is reduction of costs in order to exploit the mass market. Little progress was made in this direction in 1949 and little is expected in 1950. Comparison of costs by Standard and Poor's Corp. showed that the average cost for residential construction was about $4000 per unit in 1941 as against $7000 in 1949.

Most authorities believe that the total dollar volume of all construction will decline slightly in 1950 with the majority predicting about a 4 percent drop. If realized this would still mean a staggering expenditure for new construction of $18.2 billion. Estimates at this time indicate that private construction for 1950 will show a 9 percent drop while public expenditures will increase 8 percent. However, estimates made in previous years have been too conservative. When final tally sheets were totaled, actual expenditures exceeded the forecasts.

Barring a shooting war or prolonged strikes in critical industries, there should be no material or manpower shortages in 1950. At this writing, the construction industry can look forward to an active and successful year, and likewise the aggregrate, cement and other industries which supply the raw material.

Road Construction

Road construction like all other types of construction enjoyed the biggest dollar volume in history. Approximately $1.7 billion was spent on new or improved roads exclusive of maintenance which cost an additional $1.3 million.

Because of the more direct stake of nonmetallic minerals industries in road construction, a questionnaire was sent to the highway director of each state and to the director of public works of 15 leading cities. Each official was asked to comment on the dollar and physical volume of road construction in his state or city for 1949, the prospects for 1950, the actual needs, whether or not the needs could be met with present rate of spending, availability of funds, availability of materials, and general details such as cost comparisons, bidding, and so on. Answers from the state departments are published beginning on page 108 and those from the municipalities on page 118.

Nearly all of the highway departments reported a leveling off in the upward spiral of construction and maintenance costs. Although the ratio of dollars spent to work completed improved in 1949, current expenditures still fall far short of fulfilling present transportation needs. It is generally recognized that states must double the construction volume to make up for the wartime lag.

Monetary reserves accumulated during the war have been nearly depleted and funds for current expenditures must now come from current income. To meet the real need for more and better roads, many states have upped their gasoline and licensing taxes. Part of this new revenue is allocated to the counties and cities whose financial condition is generally much worse than the states. Several large bond issues have been floated but funds raised in this manner are usually set aside for a specific project. The states seem split about 50-50 on their ability to match federal-aid funds with the larger states showing less ability to match than the smaller.

At this time it seems likely that the dollar volume for new roads in the U.S. in 1950 could go as high as $2 billion. Even in the event of a mild downward movement of general business activity, road building expenditures are likely to increase through government pump priming.

Tunnel and final parkway sections of the Wilbur Cross Parkway, Connecticut which was opened in its entirety on November 1.

ALABAMA — The Alabama state Highway Department, through its farm-to-market program and various federal-aid appropriations, has completed in the past year either through construction or reconstruction about 1125 miles of roadway. This was accomplished at a total expenditure of $16,494,354. Expenditures for 1949 on the State Highway System by the State Highway Department for maintenance amounted to $5,150,862.

The Alabama State Highway Department is making a strong attempt to place all federal-aid primary funds available for construction underway as finances permit. Both the federal-aid secondary road construction program and the state's farm-to-market road construction program are progressing rapidly. It may be said that Alabama, during the past 18 months, has constructed more paved rural roads on the farm-to-market system (mail-box roads) than in any like period in the state's history.

In reference to making a forecast for the immediate future, the State Highway Department now has available for the 1950 construction program $12,989,410 that may be expended on the State Highway System. The State Highway Department's maintenance budget for 1950 is $5,000,000 for expenditure on the State Highway System.

In addition to the construction budget for the State Highway System, should the counties during 1950 be in a position to match $5,100,000 of state funds, the county farm-to-market program for construction could amount to $12,700,000.

The above is believed financially possible to perform; however, it will be far from reaching the needs for the highway systems of Alabama; for example, recently an estimate was made for the highway needs of the state for use by the United States Congress. This estimate revealed that the state of Alabama needs approximately $844,000,000 to construct adequate facilities.

W. G. PRUETT
Office Engineer

ARIZONA — The 1949-1950 fiscal construction budget adopted June 30, 1949, by our State Highway Commission is as follows:

	Construction Authorized
State Primary System	$10,700,574
State Secondary System	6,441,000
State Urban System	2,025,000
County FAS Projects	3,044,000
	$22,210,574

	Under Contract as of Dec. 1, 1949	Authorized for Construction by July 1950
State Primary	$ 6,166,161	$ 4,584,413
State Secondary	3,508,055	2,932,945
Urban System	89,950	1,935,050
County FAS	1,659,146	1,384,854
	$11,373,312	$10,837,262

Actual construction expenditures by the Arizona Highway Department during the fiscal year ending June 30, 1949, amounted to $11,161,691 on state highways and $1,589,533 on county FAS routes. This is a total of $12,751,224 spent in 1948-49, and the amount for 1949-50 will be approximately $10,000,000. According to the latest available estimate future requirements for construction of Arizona highways to adequate standards are approximately $150,096,000. The majority of our roads are a high type of mixed bituminous construction.

There has been a noticeable increase of interest by Arizona contractors in bidding on State highway jobs during the past fiscal year so that with the available stock of planned projects we anticipate no difficulty in submitting for bid all work that our available state and federal funds will allow.

W. C. LEFEBVRE
State Highway Engineer

CALIFORNIA — California's state highway construction budget for the 1950-51 fiscal year allocates $61,702,000 for major construction projects and construction engineering, as compared to a similar allocation of $64,200,000 in the current 1949-50 fiscal year budget, a decrease of nearly $3,000,000.

In addition to the funds budgeted for construction in the 1950-51 fiscal year there remains approximately $18,000,000 from the 1949-50 fiscal year budget to be placed under contract between the first of January, 1950, and June 30, 1950, making a total of $80,000,000 available for construction between January, 1950, and June, 1951. During the first six months of 1950 there will be projects placed under contract from both fiscal year budgets, as the Collier-Burns Act permits the advertising of projects contained in the 1950-51 fiscal year budget at such time that they can be awarded to contract on and after April 1, 1950.

You inquired as to the effect of increased construction costs on our present and future programs. The California highway construction cost index reached a peak of 216.8 (1940 = 100) in the first half of 1948. Since that time there has been a steady decrease in our construction cost index until the third quarter of 1949, when our index was 187.9. This is a decrease of 13.3 percent below the post-war peak.

We believe that most of the price reductions in the last one and one-half years have been due to increased competition among contractors, increased labor productivity, elimination of uncertainty in securing material, and some reduction in material prices. Since there has been no reduction in labor

rates, it is not believed that there will be a much larger decline in construction costs in the future.

Obviously construction costs of nearly double prewar have seriously retarded our construction program and will delay correction of critical deficiencies in our highway system for a number of years.

G. T. McCoy
State Highway Engineer

COLORADO — In 1948 we spent a total of $23,430,000 on the greatest construction program in the state's history, in which we let construction contracts totalling a little more than $18,000,000.

In 1949, our total expenditures amounted to $23,966,000, and our construction contracts awarded, amounted to approximately $14,000,000.

The 1950 budget totals $26,111,000, our largest from regular revenues, of which $17,638,000 is for highway construction. All current and accrued federal-aid funds are matched in the 1950 budget, and in addition to the current budget, there is a carry-over of $5,554,000 in previously budgeted projects which are not yet under contract. There also is a total of about $8,000,000 not in use in the 1950 budget which represents the uncompleted portions of projects already under contract.

The largest projects in the 1950 appropriations are $2,570,000 for the next section of the Denver Valley Highway, a multi-million-dollar, four-lane freeway, running from north to south through the city of Denver, and $1,300,000 for the extension of the south end of the Valley Highway south toward Castle Rock on a new location for U.S. 85-87, our north-south road on the Federal Interstate System.

Bids on construction work have been below estimates rather consistently for the last year or so, and the construction industry, locally, is in good shape to handle all the projects we are able to advertise. Owing to the fact that our cash balances are critically low, it seems doubtful at this time whether we will be able to increase next year's construction program materially over that for 1949.

We are in just about the same situation as the rest of the states — too little money to put our war-beaten roads in shape for the sudden tremendous increase in traffic. Too, with a state highway system of 12,400 miles, we have much too great a highway network to improve and maintain with present revenues.

The 1951 highway program for Colorado, of course, depends largely upon the appropriation of federal-aid funds which may become available. Assuming they equal those for 1950, we should be able to at least equal next year's construction program.

Mark U. Watrous
State Highway Engineer

CONNECTICUT — The Connecticut State Highway Department awarded 123 contracts during the fiscal year 1948-1949, with a bid value of $17,200,000. The period was marked by the completion of the Wilbur Cross Highway from Hartford to the Massachusetts state line and the Raymond E. Baldwin Bridge over the Connecticut River between the towns of Old Saybrook and Old Lyme. Nearing completion was the final section of the Wilbur Cross Parkway in New Haven including the $2,000,000 West Rock double-barreled tunnel.

Work has also been started on three expressway projects. Included in these was the North Meadows Expressway, with a two-mile grading and drainage contract, two bridge projects and a railroad tunnel having a total valuation of about $2,000,000.

Work on the first project for the Shelton-Derby-Ansonia Expressway was initiated with a $2,500,000 bridge over the Housatonic River between Shelton and Derby.

In Waterbury, work was nearing completion on the Silver Street Viaduct, a connecting link between present route U.S. 6A and the future Waterbury Expressway. The bid value on this project was slightly over $550,000. In addition to the parkway and expressway projects, and other state highway construction, nearly $7,000,000 was expended during the fiscal period in Town Aid construction and maintenance.

During the 1949-1950 fiscal year work is being expanded on the expressways. Three contracts on the East Hartford-Glastonbury Expressway have been awarded. These consist of one grading and drainage project and two bridges, having a total bid valuation of slightly more than $500,000. The Wilbur Cross Parkway was opened in its entirety on November 1, and on December 1 the eight-mile, $2,500,000 relocation of U.S. 1 in the towns of Old Lyme and East Lyme. The latter is now a 24-foot concrete highway but with grading and drainage sufficient for a future four-lane, divided expressway if required by increased traffic volume.

Preliminary contracts have also been awarded for the proposed harbor-front relocation of U.S. 1 in the New Haven area. The program for this relocation projects into the

Aerial view of work on two of the large traffic interchanges on the Denver Valley Highway, Denver, Colorado.

Superimposed on an aerial photograph of Hastings, Minnesota, is depicted the new bridge carrying U. S. Highway 61 over the Mississippi river, as it will appear when completed. It will replace the historic spiral bridge which is visible one block east.

future and its progress will be determined by the availability of funds. It is estimated to cost about $11,500,000 exclusive of the right of way.

It is expected to pave the North Meadows Project in the spring of 1950 and additional contracts are to be awarded on the Waterbury and Shelton - Derby - Ansonia Expressways. It is expected that these jobs, plus the regular state and town aid highway work for the 1949-1950 fiscal period will involve an expenditure of approximately $17,250,000.

G. Albert Hill
Commissioner
State Highway

ILLINOIS — During the year 1948, a total of $35,246,326 was expended for contract work. An additional $6,907,932 was expended for construction work performed by state day labor outfits, for additions and betterments, right of way, the state's share of railroad grade separation work, and other expenditures chargeable to construction, making a total construction expenditure for 1948 of $42,154,258. During that same year, a total of $13,939,407 was expended for maintenance, including the maintenance of city streets and the maintenance of highways constructed under special appropriations by the legislature.

During 1949, it is estimated that the expenditures for construction will amount to $42,988,000 and that a total of $13,324,000 will be expended for maintenance.

The expenditure for construction during the year 1950 will probably be about $29,000,000 and the expenditure for maintenance about $17,000,000. It is impossible at this time to estimate what the expenditures for construction and maintenance will be during the year 1951. The present biennium ends on June 30, 1951, and we cannot, of course, anticipate what the appropriation for construction during the biennium which begins on July 1, 1951, will be.

Another major improvement, most of which was opened to traffic this year, was the construction of 20.85 miles of 24-ft. concrete pavement and three bridges on Route U.S. 66 from Glenarm south to the junction with Illinois Route 48 west of Raymond. A new bridge over Mill Creek is now under construction and the gap at Farmersville will be paved during the spring of 1950 to complete this improvement. The project will cost approximately $2,300,000 and is the first step in the eventual construction of a four-lane divided highway.

C. M. Hathaway
Chief Highway
Engineer

KANSAS — In its spring session the Kansas State Legislature made more money available for highway construction. Even with the increased appropriation the rate of construction will only take care of approximately two-thirds of the actual needs per year as determined by an engineering analysis made in 1948 for a long-range 20-year program.

In 1949 the state contracted for $21,600,000 of highway construction on the state highway system, and the improved federal-aid secondary system. In addition $1,900,000 is left for resurfacing.

We feel that we are making better progress toward the construction of an adequate highway system and hope that our revenues for this purpose will be increased by succeeding legislatures. While substantial progress is being made in the construction of needed projects, additional funds will allow the system to be completed in a reasonable length of time.

R. G. Keeling
State Highway
Engineer

KENTUCKY — For the first ten months of 1949 Kentucky invested approximately $35,892,000 in main highways. During this period 324 projects were completed or placed under contract.

There are 12,000 miles of main highways in Kentucky with approximately half that mileage in substandard condition. A road rating started last year sets up the priority for construction on main highways throughout the state. Each section will be improved as rapidly as funds are available. Estimates made by the department indicate that Kentucky needs $575,000,000 worth of work done on all its roads to bring them up to acceptable standards.

D. H. Bray
State Highway
Engineer

MAINE — Expenditures in 1948 from state and federal funds amounted to $9,887,481 as capital outlay for constructing 440 miles of highways, bridges and railroad grade separation structures and in addition the state expended a total of $7,695,784 for maintenance and snow removal.

The estimated expenditures for 1949 from state and federal funds for construction are $11,944,917 to construct an estimated 522 miles of highways, bridges and railroad grade separation structures, and in addition it is estimated that the expenditure of state funds for maintenance and snow removal will be $7,662,830.

For the fiscal years 1950 and 1951, it is estimated that expenditures of state and federal funds for constructing highways, bridges and railroad grade separations will be $11,000,000 and state expenditures for maintenance will approximate $7,000,000 each year. The estimate of mileage that will be constructed during 1950 and 1951 is 500 miles yearly.

Although expenditures at the the present level are showing a marked improvement in Maine's

highway system, they are somewhat short of filling transportation needs of this state.

LUCIUS D. BARROWS
Chief Engineer

MARYLAND — The Maryland State Roads Commission has set up a road-building program that is designed to put Maryland back once more in the position she once enjoyed, as the best-roaded state in the country. At present the commission is thinking in terms of expending $200,000,000 on new roads and bridges, widening and resurfacing existing highways, and secondary roads, in five years.

The magnitude of the undertaking can be visualized, when it is taken into consideration that for a number of years prior to 1947 the expenditures for construction averaged slightly more than $7,000,000 annually. A good start on this $200,000,000 program was made in 1948, when contracts totaling $35,875,139 were awarded. The second year of the five-year highway modernization plan, as of November 22, 1949, finds projects totaling $29,090,965 advertised and awarded, $6,866,096 of bids opened but not awarded, while projects estimated to cost $8,570,911 are advertised on which bids have not been received, making a total of $44,572,972 advertised to date. The total estimated amount to be advertised during 1949 will exceed $50,000,000.

A tentative program, estimated to equal the 1949 program, has been set up for 1950.

None of these figures includes the $41,000,000 Chesapeake Bay Bridge project upon which construction has just started. An outstanding project in this program includes the following:

Baltimore-Washington Expressway, from Baltimore City Line to Jessup-Fort Meade Road, 13.944 miles, including spurs, estimated cost $14,700,000. To date, 8.114 miles divided into eight contracts have been awarded on this project, amounting to a total of $8,215,746.

WILLIAM F. CHILDS, JR.
Chief Engineer

MASSACHUSETTS—We are proceeding with the largest and most comprehensive program of highway improvements ever undertaken here in this state. After the recent war this state found itself in the same position as most of the other states as far as highway improvements, that is, our highways were being neglected; and while plans and designs were partially complete, there were not sufficient funds to accomplish any worthwhile large scale improvements.

Our current state administration, through legislative authorization, made available to this department a $100,000,000 bond issue for highway improvements. Such authorization was effective July 1, 1949, with the provision that the money must be under contract not later than June 30, 1951. This legislation so enacted provided for the $100,000,000 to be expended as follows:

a) $37,000,000 in Metropolitan Boston
b) $53,000,000 outside Metropolitan Boston
c) $2,000,000 for state-wide traffic lines and protective devices
d) $8,000,000 for the Metropolitan District Commission.

Items a, b, and c are under the jurisdiction of this department.

Previously a report was submitted to the governor explaining that the cost of essential highway improvements needed throughout the state were estimated to cost approximately $700,000,000.

Thus, it is obvious that the $100,000,000 bond issue will provide only a beginning.

It is expected that the $37,000,000 for Metropolitan Boston will be utilized almost entirely for a section of a so-called Expressway Belt around Boston City proper. Plans, estimates, and specifications are expected to be completed on or before July 1, 1950, and the contract awarded shortly thereafter.

Contracts using part of the $53,000,000 for work outside Metropolitan Boston are now under construction and contracts for the remainder of these funds are practically complete for an early award. It is expected that this portion of the program, the $53,000,000, will all be under contract by January, 1950.

Future expenditures for highway improvements will depend on legislative approval and appropriation, but similar large-scale amounts must be made available if this sorely needed accelerated program is to be extended to accomplish the essential improvements.

P. H. KITFIELD
Chief Engineer

MICHIGAN — Michigan has put under contract as of December, 1949, projects obligating all of the 1946-47 and '48 federal post-war funds and approximately $5,000,000 of the 1950 funds, besides a strictly state program amounting to between $3,000,000 and $4,000,000 yearly.

We paid out for construction of roads and bridges, including rights of way, in the calendar year of 1948, $44,035,946, and expect to expend $45,020,540, in the calendar year of 1949. These figures are actual up to December 1, and estimated for the month of December.

It would appear that 1950 will drop down to approximately $25,000,000, and 1951 $30,000,000, unless we receive some aid in the form of increased revenues. Our department at the present time is unable to match some $7,000,000 of federal funds for the 1950 program, and around $12,500,000 of

View of a section of the Shirley Memorial Highway in Virginia.

Old bridge (left) was replaced with modern structure as part of Missouri's improvement program of U. S. route 40.

the 1951. In other words, we are short $19,500,000 in matching available federal funds alone.

Our emergency needs at the present time are well over $200,000,000, and on a 15-year program of needs the figure is somewhere around $800,000,000.

H. C. Coons
Deputy Commissioner
Chief Engineer

MINNESOTA — In Minnesota the State Highway Department has in the first eleven months of 1949 placed under contract $16,900,000 worth of construction, in addition to a carryover of $9,300,000 of the 1948 contracts on the state trunk systems. Of this $26,200,000 total, $19,400,000 has been completed, leaving a carryover of $6,800,000 under construction or under contract. Work completed is below the $21,500,000 of construction performed in 1948, when substantial postwar reserve funds were available to augment current revenues.

As a result of increased gas and motor vehicle taxes passed by the 1949 legislature, the department hopes to contract about $24,000,000 of trunk route improvements in 1950. Even this stepped-up program, if realized, will still be substantially short of the annual construction volume required to keep pace with the increasing traffic requirements and to meet growing problems of obsolescence and deterioration of the older, heavy-traffic routes. An interim highway committee of the state legislature has reported trunk highway improvement needs totalling $458,000,000. Subsequent to this report, 704 miles of new state routes have been added to the trunk system, increasing the system's mileage to 11,911 miles.

Outstanding construction projects commenced during 1949 were a new interstate free bridge on U. S. 12 over the St. Croix river at Hudson, Wis.; a new bridge over the Mississippi River at Hastings to replace the antiquated but world-famous "spiral" bridge; and initial projects toward ultimate realization of the 50-year-old rail-street grade separation program in downtown Minneapolis.

O. L. Kipp
Chief Engineer

MISSOURI — Total highway awards for the state of Missouri during 1949 totalled between $26,000,000 and $27,000,000. The funds expended were allocated to various types of construction from grading and paving sections to finished concrete pavements.

As to the total expenditure for 1950, we are not at this time in a position to give a positive answer to the dollar expenditure. However, it looks as if it might be about the same or a little more than that spent in 1949. In other words, somewhere between $25,000,000 and $30,000,000 of work. Of course, this is somewhat dependent upon state revenues available for match purposes with federal aid funds. At this time it appears that work for the fiscal year beginning July 1, 1950, will be curtailed unless some additional state funds are forthcoming.

C. W. Brown
Chief Engineer

MONTANA — A state highway construction program is planned for Montana for the calendar year 1950, in the approximate amount of $16,000,000. This represents a substantial increase over the construction programs of previous years, which were $12,592,000 and $11,579,000 for the years of 1948 and 1949, respectively. The work will be accomplished with federal aid.

The state's share of the 1950 program will be financed in large part with the last remaining funds from the sale of previously authorized debenture bonds. With the exhaustion of the debenture bond money, future programs for the year 1951, and thereafter, will be reduced to approximately $8,000,000 a year unless the state highway revenues are materially increased in the meantime.

In addition to the federal-aid program, handled by the State Highway Commission forces, as discussed above, there is planned for expenditure during 1950, under the direct supervision of the Bureau of Public Roads, an approximate $1,250,000 of Forest Highway funds for the improvement of those sections of the Federal Aid Highway System which are located within the national forests.

It is anticipated that the state maintenance program for 1950 will cost approximately $6,000,000, of which the sum of $400,000 is earmarked for the purchase of new equipment.

C. E. Stahl
State Highway Engineer

NEBRASKA — During 1948 this department obligated $13,724,400 for construction purposes and $16,920,000 in 1949.

We anticipate that during 1950, we will be in a position to contract approximately $15,000,000 worth of additional work. The outlook for 1951 is problematical, dependent upon the outcome of a referendum vote in November on the matter of retaining a one-cent increase on gasoline tax and increased license fees, which were passed by the 1949 session of the legislature and are now in effect. Should we lose the increased income from these sources, we would be restricted to a construction program of approximately $8,000,000 in 1951, whereas a continuation of the income would probably permit a $15,000,000 construction program in 1951.

Our actual needs as of June, 1949, based on a 20-year construction program, amount to a total of $257,000,000, which we think could be met were our present sources of income to remain unchanged.

Nebraska is not proposing to construct any super-highways; however, we do plan to ask for bids early in 1950 for the construction of a viaduct in Omaha, which we estimate will cost in the vicinity of $1,000,000. Generally speaking, the Nebraska program is quite well distributed among the various items of

construction, namely, grading, minor structures, small and medium size bridges, bituminous surfacing, and rigid type pavement. We anticipate an increasing activity in the resurfacing of old concrete pavement with asphaltic concrete.

R. F. WELLER
Chief Highway Engineer

NEW JERSEY — The appropriation for the 1949-1950 fiscal year for highway construction was $24,530,000. Our presently requested budget for 1950-1951 amounts to $37,500,000 for state highway construction. It is difficult to state in advance the amounts of money which will be available for highway construction for the fiscal years beyond the above. Our funds are derived from the General State Fund and the yearly amount made available is subject to the pleasure of the legislature.

It is estimated that a yearly program approximating $65,000,000 or more is necessary to meet the needs of this state. Included in these programs is the yearly increment for the construction of route 4 Parkway, a four-lane divided highway which has been legislated from Route 6 in Paterson to Cape May. We are now working on the portion from the Raritan River northerly toward Paterson. It is expected that the first 10 miles of this section will be opened to traffic in 1950.

In addition to the activity by the highway department in the field of highway construction, a newly created Turnpike Authority is active in the planning of a toll highway in this state. This toll road is being planned from the vicinity of the George Washington Bridge over the Hudson River to the Delaware Memorial Bridge over the Delaware River at Deepwater, N. J. This toll road project will cost approximately $200,000,000 and is scheduled for an early opening to traffic. It is planned to construct this road as a divided highway with intersecting streets at grade.

E. W. KILPATRICK
State Highway Engineer

NEW MEXICO— The 1950 construction program for New Mexico will surpass the 1949 program by $2,000,000. In 1949 the State Legislature increased the gasoline tax from 5c to 7c a gallon, with the 2c earmarked for debt retirement. Through the litigation arising out of the legislative action over the increased tax, the activities of the highway department were delayed three to four months until the action could be clarified by the State Supreme Court.

As a consequence, the 1949 program was behind schedule. In order to pick up the slack and at the same time go ahead with the regular size program will mean an expenditure of roughly $16,000,000 for 1950.

Federal-aid secondary money will be spent over many small projects to build farm-to-market roads to serve as many people as possible. Perhaps 45 projects will be built under this category.

During 1950 we expect to construct an urban project at Los Vegas, N. M., which will run in the neighborhood of $1,250,000.

L. D. WILSON
Administration Engineer

NEW YORK—A highway construction program of $140,000,000 was set for the 1949 fiscal year of the New York State Department of Public Works. Although predictions of future programs are dependent on legislative action, it is hoped the record program of 1949 will be equalled or bettered both in 1950 and 1951.

During 1949, a well balanced schedule of road construction and reconstruction, grade crossing work, thruway and parkway building was advanced. Up to December 1, more than $60,000,000 in acceptable bids on highway work were received. Almost $10,000,000 in parkway and more than $6,000,000 in thruway contracts were approved or slated to be awarded. As of December 1, more than $13,000,000 in contracts for grade crossing elimination or reconstruction have been awarded or were pending award.

A total of nearly $92,000,000 in acceptable highway contracts were received (as of December 1, 1949), of which only $11,750,000 were still pending award. According to the department's Bureau of Research and Statistics, more than 435 miles of highway will be constructed or reconstructed under these 1949 contracts.

Thruway construction is being progressed in four widely separated sections of the state, including Erie, Onondaga, Madison, Ontario, Ulster, and Greene counties. To date approximately 10 percent of the ultimate thruway has been placed under construction.

Presuming availability of funds, this Urban Arterial Route Program will be advanced to include every city in the state. Buffalo, Rochester, Batavia and Syracuse have had actual construction work progressed in conformity with the department's master plans. A project involving the Vestal Avenue Arterial Route in Binghamton was only recently awarded. Throughout the state there have been 22 acceptances of state-proposed master plans, with others in prospect for the near future under the Urban Arterial Route Program.

W. J. LAFLEUR
Director,
Bureau of Public Relations
Department of Public Works

NORTH DAKOTA — The past year was quite dry and very favorable for the construction of highways and for the contractors engaged in the construction of highway projects.

During the year approximately $12,500,000 was spent on the improvement of primary and secondary highways. Our 1948 construction improvements amounted to $11,300,000, and an estimated construction of $11,500,000 is planned for each of the years 1950 and 1951.

Due to the deterioration of roads

General view of the concrete pipe installation on U. S. 70-80, New Mexico.

The Gulf Freeway project in Houston, Texas, has approximately $1 million in work ready for contract.

and suspension of construction during the war years, construction lagged considerably behind actual needs. A program accelerated at double the present rate of construction would relieve the lag to a great extent. However, with limited funds in a rural state, doubling the program is quite impossible.

All primary roads are built for durability and permanence. Surfaces are asphaltic concrete or portland cement concrete with an adequate sub-base of granular material to provide stability over local soils encountered. With reasonably stable soils, surfacing plans call for 5 in. of pit run base, 2 in. of stabilized gravel and 2½ in. asphaltic concrete wearing course. On a number of projects the pit run base is increased to 12 in. or even greater over unstable areas.

High postwar costs have restricted mileage constructed within appropriations. However, during the past six months a noticeable decrease has occurred in unit bid prices. It now appears that unit prices are nearing a stabilizing level with future prospects for lower unit costs on some items.

M. P. Wynkoop
Chief Engineer

OREGON — Construction expenditures on state highways in Oregon during 1950 are expected to total about $15,250,000, approximately $2,250,000 more than 1949. From this total, $10,000,000 will be spent on work under contract as of January 1, and the remaining $5,250,000 will be spent on $13,500,000 of work contracted during 1950. Right of way costs are not included in any of the amounts stated.

Increased expenditure in 1950 was made possible by the recent authorized increase in gasoline tax and motor vehicle registration fees. The gasoline tax was increased from 5c to 6c per gallon while the registration fees for passenger cars and pick-ups was increased from $5 to $10 per vehicle.

Satisfactory progress on federal-aid programs is indicated from the fact of the $21,200,000 total program for the fiscal years 1950 and 1951, $7,100,000 (or 33 percent) is under contract as of January 1. Estimates of the highway needs of the next 20 years, however, indicate the present rate of construction expenditure to be roughly two-thirds sufficient to meet the growing highway needs.

The information included above does not indicate work expected to be done on Oregon's forest highways by the Bureau of Public Roads. It is anticipated that the bureau's expenditures on that class of work during 1950 will be in excess of $3,000,000.

Contractors seem to be bidding freely on all classes of work, and prices appear to be running about 15 percent below those of 1950. From the highway construction viewpoint, all indications point to a successful year in 1950.

R. H. Baldock
State Highway Engineer

PENNSYLVANIA — During the calendar year 1948, the Pennsylvania Department of Highways expended the sum of $103,313,000 for construction, reconstruction and resurfacing of state highways.

In 1949 we will spend approximately $95,000,000 for similar purposes. In 1950 we expect to spend from the Motor License Fund approximately $112,000,000 for similar purposes.

An engineering study completed recently by the engineers of the department discloses the need to expend $162,000,000 per year to place our highway system of 41,000 miles in satisfactory condition during the next ten years.

Ray F. Smock
Secretary of Highways

TEXAS — Our expenditures for construction in Texas in 1948 ran $77,000,000. Construction in 1949 will call for approximately the same amount. As you know, the 1950-1951 federal-aid program is reduced from the first post-war program. The Texas Legislature has provided $15,000,000 each year for the next two years for rural roads, and this appropriation should allow Texas highway construction to proceed at the post-war level for the next two years.

Maintenance work in Texas cost $19,000,000 in 1948. The 1949 figure will run slightly higher, and the two succeeding years will increase in proportion as new work is completed.

Construction projects scheduled tentatively for contracting in 1950 include the following: (1) Urban expressway construction costing around $3,000,000 to extend the present limits within the city of Dallas. (2) On the LaPorte - Baytown tunnel project under the Houston ship channel, construction is now under way for the two-mile tunnel and hydraulic fill. Approach paving and construction of the ventilation building will probably be let on contract in 1950. (3) Grading and structures costing approximately $300,000 between Gregory and Portland and running up to the hydraulic embankment on the Nueces Bay Causeway project are scheduled for contract in 1950. (4) The Gulf Freeway project in Houston has approximately $1,000,000 in work ready for contract. Around $4,000,000 in paving remains to be done on the four-lane U. S. 75 running from Houston to Galveston. (5) The Sulphur River bridge be-

tween Texarkana and Atlanta on U. S. 59 should draw bids of over $500,000. (6) A $600,000 storm sewer in Beaumont to provide drainage for the Beaumont expressway will be among 1950's projects. (7) The first increment of the Valley Expressway between Mission and Pharr is now awaiting purchase of right of way. The initial increment calls for an expenditure of over $1,000,000 on U. S. 83. (8) The interstate route through Austin of U. S. 81 should all be let in 1950. The two-mile segment will cost over $1,000,000. (9) The entrance of U. S. 66 into Amarillo from the west will cost over $500,000. (10) The north-south and east-west expressways in Fort Worth have around $3,500,000 in work outstanding which will likely be placed in 1950. (11) Widening the road from Midland to Odessa to four lanes will cost approximately $1,000,000. (12) U. S. 81 through Hillsboro to Itasca on relocation will run around $1,750,000. (13) Additions to the San Antonio expressway will call for expenditure of around $2,000,000.

D. C. GREER
State Highway Engineer

VERMONT — The 1949-50 Vermont federal-aid and state highway construction program comprises 98 miles of road improvement, 10 new bridges, eight existing bridges widened, and two railroad crossing flash signals. Most of these projects already have been contracted.

Five of the new bridges are being financed from a special $2,800,000 state bond issue authorized by the 1949 legislature. The entire program involves an estimated total cost of $8,267,500.

According to the state highway board, this program will use all of the state money so far made available by legislature. Except in the event of excess motor vehicle receipts, the board stated that no additional federal-aid or state highway construction can be undertaken in Vermont until further appropriations are made by the 1951 legislature.

A 1951-1952 construction program will be approved early next year and the projects designed for contracting as funds become available.

It has been estimated by the state highway board that in order to serve present-day traffic adequately an estimated expenditure of $90,400,000 should be spent on the state highway system. At the present rate of income, it will take 33 years to complete these needed improvements.

A. W. COLEMAN
Traffic Engineer

VIRGINIA — Since the war Virginia has spent nearly $50,000,000 a year for highway construction and maintenance purposes. This figure includes expenditures on both our 9,000-mile primary highway system and 39,000-mile secondary highway system. Expenditures are broken down approximately into $20,000,000 a year for primary construction, $7,500,000 for primary maintenance and more than $21,000,000 a year for construction and maintenance on the secondary system. In 1950 it is expected that the expenditures on all types of road construction will be a trifle higher than in past postwar years. Naturally, increased costs have served to hold back Virginia's program. However, we believe that in spite of increasing obsolescence of the heavily traveled routes we are managing to keep abreast of the increasing flow of motor vehicles on virtually every route of the state. In the past years it has been noted that construction and maintenance costs have definitely leveled off.

Our only highway which might merit the description of a superhighway is the Henry G. Shirley Memorial Highway, a 17.3-mile limited access thruway which bypasses metropolitan northern Virginia into Washington, D. C.

R. E. STEELE
Director of Public Information

WASHINGTON — Our appropriations cover a two-year period beginning on April 1 and ending on March 31 of the odd years, and all of our records are summarized at the end of each two-year period.

We are now 8½ months along in the biennium which started April 1, 1949. All of our expenditures for highway purposes are controlled by actual income from motor vehicle license fees and gasoline taxes, plus federal-aid highway appropriations. During the current biennium our gross income will be larger than it has ever been before as a result of an increase of 1½ cents per gallon in the gasoline tax and an increase of $2.00 in the base rate of motor vehicle license fees. By reason of the present high costs of construction, right of way and highway maintenance, the volume of construction work that we can pay for during the current biennium will be little if any larger than the volume we did carry out and pay for in the 1939-1941 biennium, ten years ago.

During the current biennium we expect to place about $50,000,000 of new construction work under contract. Our biggest single project, by far, is the modernization of U. S. Highway Route No. 99 between Vancouver, Wash., and Olympia, which was started before the United States entered the Second World War, stopped during the war, and resumed in 1946. The aim is a modern four-lane highway to replace an obsolete two-lane highway.

Outside of the work scheduled on U. S. 99, the projects programmed for this biennium are pretty well scattered over the 4,273 miles of primary state highways and 2,202 miles of secondary state highways that are included in the state highway system. Some of these jobs will be rather costly, but none are unusual or spectacular.

NORMAN HILL
Work Control Engineer

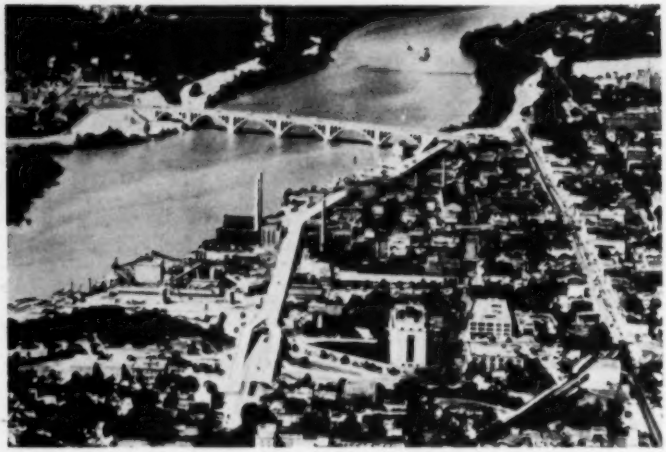
WEST VIRGINIA — During the first ten months of 1949 the State Road Commission has established an all-time record in the amount of road and bridge projects awarded to contract construction.

Beginning with a contract letting for the opening of construction bids on January 25, lettings have been held each month with contracts for 145 road projects and 23 bridge projects awarded up to December 1. A final letting is scheduled for December 13, which should bring the contract construction awards up to the $16,000,000 mark.

Voters of West Virginia gave an overwhelming plurality at the 1948 general election to an amendment sanctioning the expenditure of $50,000,000 on the state's secondary system. Actual construction work on this new program became effective on July 1 of 1949, and for the first three-month period the commission has just released the following report on this new program:

Projects authorized and started	314
Mileage involved	675
Bond funds encumbered	$7,690,000

A further breakdown of this program discloses that 41 projects, involving 104 miles of road improvement, were let to contract at a cost of $2,250,000. State forces are working on 237 projects which include 490 miles at a cost of $4,425,000,



Aerial view of the K street elevated expressway approach to the Francis Scott Key Memorial bridge over the Potomac River, Washington, D. C.

while prison labor is undertaking 36 projects totalling 81 miles and costing $1,015,000.

Interest of contractors in bidding on state construction projects has been very gratifying. While in past years advertisement of a road or bridge project usually resulted in two or three bids being placed, during 1949 the average number of bids received per project has been six, and, in some cases, as many as 16. This competition has produced more economical prices.

The commission's future primary program is largely contingent on funds allocated by ensuing legislatures.

The secondary program is expected to continue through 1952 under the present programming arrangement. However, in this category it is well to bear in mind that an expenditure of $50,000,000 for secondary roads in a state like West Virginia, with its rugged and mountainous terrain, is only a start when compared with the ultimate goal of a well improved secondary road program.

M. L. O'NEAL
Consulting Engineer

WISCONSIN — Highway construction work in Wisconsin contracted by the State Highway Commission in 1948 total approximately $33,000,000. The 1949 work will total approximately $28,500,000 in cost for a total amount of work slightly in excess of the amount of work contracted in 1948. Comparison on the basis of unit prices for representative items such as excavation, portland cement concrete paving, structural steel, and concrete masonry shows a reduction of 19 percent in cost during 1949. An average of 3.6 bidders per project in 1948 rose to more than double that average in 1949, representing an advantageous return of competition for highway contracts.

Construction expenditures for 1950 and 1951 will probably reach the totals of 1948 or 1949, but in the years after 1951 will be less, because the reserves accumulated during the war years are being depleted. Current motor vehicle revenues supplemented by federal aid do not keep pace with current needs.

An impressive highway project is the Hudson Interstate Bridge on U. S. Highway 12, a joint project of the states of Minnesota and Wisconsin for a new structure over the St. Croix River, and relocation of approach highways in Wisconsin.

The Hudson Interstate Bridge, together with all approaches, is about five miles long and will cost approximately $3,500,000. The first contract was awarded in April, 1948, for grading of the Wisconsin approach, followed by contracts for temporary railroad subway and channel widening. Contracts negotiated in 1949 include interstate bridge substructure, interchange, and interstate bridge superstructure. Bids for paving the project will follow after the completion of the main bridge superstructure.

E. L. ROETTIGER
State Highway Engineer

WYOMING — As you know, there was a 10 percent reduction in federal aid following the 1944 act. This same ratio was roughly reflected here. In 1948 and early 1949 we were operating to a small extent on remaining accumulated funds from the war years. At present these funds are exhausted.

Our program for 1949 ran slightly over $10,000,000. It is reasonable to assume that it will be about that for 1950 and to offer anything other than that amount for 1951 would be using the ouija board.

In 1948 we spent slightly over $11,000,000, this including several projects financed entirely with state funds. In 1949 these state funds were required for matching federal-aid and maintenance. During these postwar years we have seen our maintenance figures spiral, but actually it is to be expected. With a deterioration such as we have been exposed to, and Wyoming is not alone, it has been necessary to resort to temporary expedients. We are constructing in several instances projects with both federal-aid and state funds that will be inadequate within five years. The reason for this is obvious. Taking costs into consideration, two miles of this type of work can be accomplished for the cost of less than one mile of adequate standards. However, there are insufficient funds for a program of high type at present.

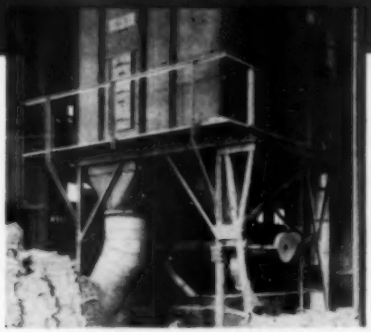
Our programs as far as we can tell at this time will resolve into about $2,500,000 for maintenance and the remainder for construction. We always have been able to match all available federal-aid, and it looks at this time as though we will continue to be able to do so.

There are no major streams in Wyoming such as many states have to contend with; hence, our bridge costs are not too severe. We are planning a new structure across the Platte River, which we hope to place under contract this month. This is at Orin Junction, Converse County. There are one or two similar bridges needing replacing and possibly one of them can be included at a later date.

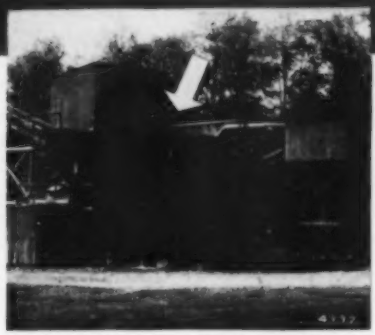
There are six urban areas in Wyoming as defined by the Federal Aid Act. Hence, the demand is not too great. Certainly many communities urgently need improvement that will allow free movement of traffic, but the improvements that can be provided and probably will be provided are not of the design usually associated with freeways.

J. R. BROMLEY
Superintendent

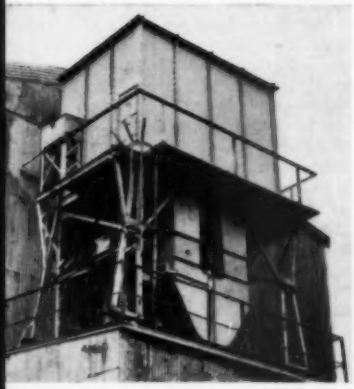
SLY PIONEERS AND LEADERS IN DUST CONTROL



Sly Dust Filter in a Cement Plant Bag House.



Sly Dust Filter in a Feldspar Quarry and Mill.



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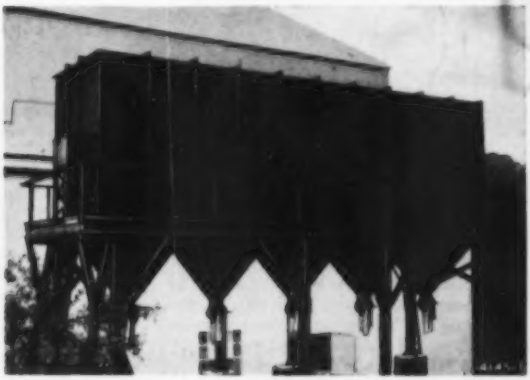
One of several Sly Dust Filters on a Cement Plant Pack House.

Sly Dust Filter connected with the Crushing Plant of a manufacturer of roofing granules.



Sly Dust Filter in a Rock Crushing Plant.

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Drawing of the Brooklyn bridge over the East River, New York, N. Y., which will be modernized according to plan in lower part of insert. Top sketch shows span as it is today.

BALTIMORE, MD. — Highway expenditures in 1948 amounted to approximately $6,000,000, divided generally in two categories—(1) for new highways approximately $2,000,000 and (2) for surfacing, resurfacing and otherwise rehabilitating existing highways, approximately $4,000,000.

Expenditures in 1949 will approximate $7,000,000, divided approximately into (1) $2,000,000 for new highways and (2) $5,000,000 for maintenance. Contingent upon the availability of funds as proposed in the Ordinance of Estimates for 1950 and 1951, it appears that our highway construction work for the next two years might be somewhat less than the 1948 figure.

Contingent upon the availability of funds, major projects planned for the near future include a bridge under the Pennsylvania Railroad at Mulberry Street — estimated cost $600,000; bridge under the Baltimore and Ohio Railroad at Monument Street and Pulaski Highway—estimated cost $500,000; bridge over Calgate Creek on Broening Highway —estimated cost $1,250,000; Hilton Street Viaduct over the Western Maryland Railroad—estimated cost $350,000; and the Northern Parkway Bridge over Herring Run—estimated cost $750,000.

During the construction years of 1948 and 1949, approximately 6,000,000 sq. yds. of paving was laid for new streets and surface treating of existing streets. This work was performed by contract under the supervision of the Bureau of Highways.

P. L. Holland
Director of Public Works

CINCINNATI, O.—A total of $1,270,001 was expended for construction in 1948 or projects carried out under public works contracts. In addition, a total of $340,250 was expended for construction on sewer projects, plus $1,650,561 for the acquisition of real estate required for proposed street improvements.

While figures are not complete at this time, it is estimated that approximately $2,460,000 will have been expended for construction during 1949 on highway and viaduct projects carried out under public works contracts. Further, it is estimated that approximately $125,000 will have been expended for construction during 1949 on sewer projects carried out under public works contracts.

The tentative 1950 and 1951 improvement programs provide for the following expenditures:

	1950
Streets	$ 2,810,800
Sewers	2,120,000
Flood Prevention	3,751,200
Grade Eliminations	4,641,000
Structures	177,000
Total	$13,500,000

	1951
Streets	$ 4,359,200
Sewers	2,465,000
Grade Eliminations	2,320,900
Structures	300,000
Total	$ 9,445,100

Property costs are included in the above figures for the various types of projects listed in the 1950 and 1951 programs.

The extent to which the 1950 and 1951 programs will be carried out depends primarily upon the validity of the passage of several bond referenda voted upon at the election.

All the bond issues received a majority favorable vote but a quirk in the state law leaves in doubt whether a 55 percent or 65 percent favorable vote was required. Only the grade crossing elimination bond referenda received a favorable vote in excess of the 65 percent required under the old state law.

A new state law now requires a 55 percent favorable vote on bond referenda issues placed on the ballot at general elections and 60 percent at special elections.

Unquestionably, the increased costs in land and construction has had a material effect on our construction programs.

Our cities with their limited sources of income are all finding it more and more difficult to keep their streets in first class condition, let alone meet all the additional requirements brought about by the tremendous increase in vehicular traffic since the war years.

R. G. Sarvis
Director of Public Works

DENVER, COLO.—The construction program for the city and county of Denver in 1949 amounted to $7,537,844. It is estimated that expenditures for similar purposes in 1950 will reach $10,348,000.

In addition to the construction included in the amounts above there was an unusual amount of curb, gutter, sidewalk and sanitary sewer work which was constructed here with private funds. This private work for 1949 totaled 150,000 lineal feet of combined curb, gutter and sidewalk and 93,000 ft. of private sanitary sewers.

Inasmuch as the construction program for 1949 is well in excess of any previous years, it does not appear that construction cost was an appreciable factor in retarding the work.

Terry J. Owens
City Engineer

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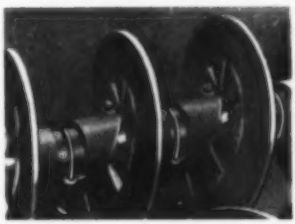

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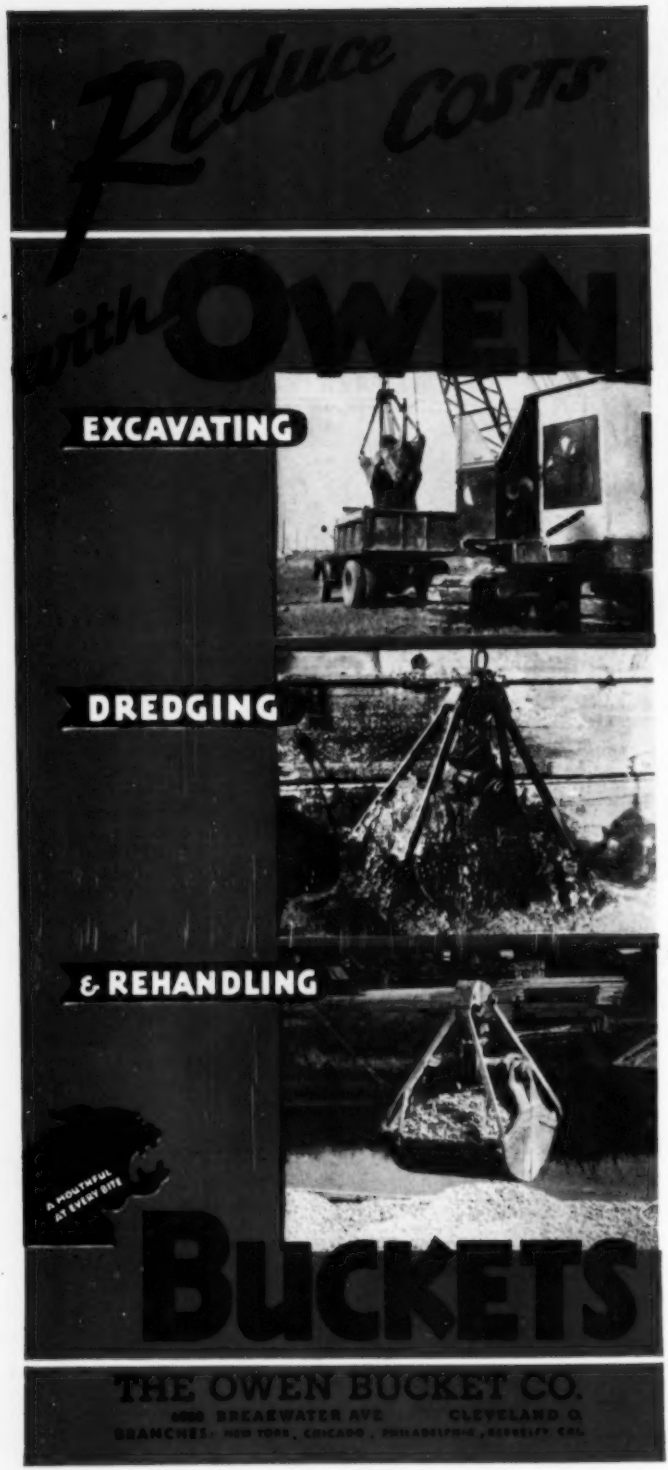


DETROIT, MICH. — During the construction season of 1949 the city of Detroit awarded contracts for 73 miles of one-course concrete pavement at a total cost of $5,800,000 of which about 77 percent is assessed to the property benefited, the balance being paid by the city. During the previous year, 1948, the contract awards covered 66 miles at a total cost of $5,200,000. The initiation of this class of paving by petition precludes accurate forecast of next year's program, but it is fairly certain it will not be below 60 miles for 1950.

During the last two fiscal years, the Division of Street Maintenance and Construction expended through force account construction the approximate sum of $2,300,000 each year. This work included asphalt resurfacing, pavement maintenance and repairs, sidewalks, bridge maintenance and railroad grade crossing protection (city one-half—railroads one-half).

Expressway construction in Detroit is proceeding under a three-party agreement whereby state, county and city share the cost in the ratio of 2-1-1 with federal aid matching the total of the three parties.

Two expressways, one east-west and the other north-south, are being built under the direction of the State Highway Department and Wayne County Road Commission, respectively. The total combined length of the first stage of construction under commitment is 9 miles, at an estimated cost of $70,000,000.

Work was begun in 1946 and to date $29,500,000 has been spent or encumbered. Of this amount, $19,000,000 is for right of way and $10,500,000 for construction. Three railroad bridges and twelve vehicular bridges are completed or under contract, and the first two contracts for building the depressed highway sections are on the way. The work under the two sections now under construction is expected to be completed by 1953.

G. R. THOMPSON
City Engineer

KANSAS CITY, MO. — For the fiscal year ending May 1, 1950, it is proposed to initiate projects costing $5,230,000. This is divided up among the various types of improvements as follows:

Improvements and additions to hospital facilities	$ 80,000
Parks and playgrounds	150,000
Trafficways and boulevards	1,750,000
Constructing, extending and improving sewer systems	425,000
FM radio system for the fire department	125,000

FM radio system for the police department	250,000
Improvements and additions to airport	700,000
Improvements and development of Swope Park	1,000,000
Street resurfacing and rehabilitation	750,000

JOHN E. MARING
City Engineer

LOS ANGELES, CALIF.—During the 1948-1949 fiscal year, the value of public improvements in Los Angeles amounted to $26,925,723. These included normal city improvements such as street projects, storm drains, sewers, and bridges and structures, handled under the jurisdiction of the Department of Public Works, for which the contract cost amounted to $21,076,930. The above total also included improvements in the amount of $5,848,793, constructed within the Los Angeles city limits, but for which the contracts were handled by the state of California.

Current trends indicate that, during the 1949-1950 fiscal year, the value of city projects to be constructed may be roughly estimated at about $21,500,000. The value of state contracts may amount to as much as $12,000,000 during this same period, based on unofficial preliminary estimates.

LLOYD ALDRICH
City Engineer

MILWAUKEE, WIS.—During the past four years we have been making a concentrated effort to catch up with the backlog of street improvement projects left by the depression and World War II.

In 1948 we spent $2,500,000 and in 1949, $3,750,000. In each of the years 1950 and 1951, I expect we will spend about $3,500,000. This latter sum is exclusive of any amount which may be spent on the currently much discussed expressway system.

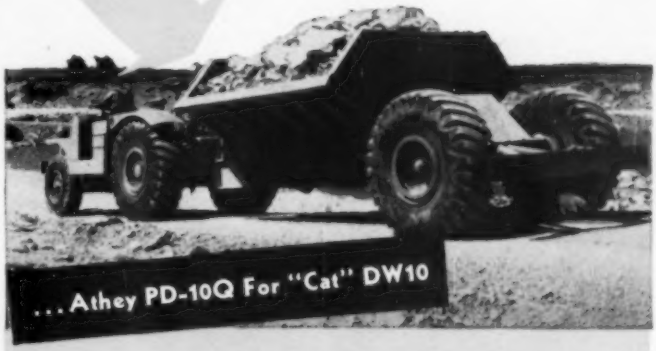
While I believe we have been gaining some ground, I also believe that the end of 1951 will leave us with a considerable number of streets without the improvement they deserve.

WALTER M. SURETLIK
Commissioner of Public Works

MINNEAPOLIS, MINN.—During 1948, our department spent a total of approximately $775,000 for new construction. Our 1949 program totaled $1,100,000.

(Continued on page 140)

ROCK-HAULING "RACE HORSE"



It's an Athey PD-10Q Quarry Trailer, heaped with 15 1/2 tons of shot-rock, sprinting to the dump.

This maneuverable carrier of solid materials (like rock, shale, slate, coal) has a body of new high-tensile strength steel — stoutly-braced at ends and sides for severe duty.

Great stability is apparent in the wide all-welded frame. Torque-absorbing hexagonal crossmembers give the frame high resistance to dumping stresses. Body dumps to either side, under hydraulic control.

The PD-10Q Trailer carries its heaped 10-yard loads on large, low-pressure tires. That means good flotation, low rolling resistance, and ability to carry top pay-loads at the DW10 Tractor's best practical speed.

See your Athey-"Caterpillar" dealer for full information on how the PD-10Q can fit your needs.

ATHEY PRODUCTS CORPORATION
Chicago 38, Illinois

Athey APCOR Products

Athey

B.F.Goodrich

Why you get more recappable tires when you use B. F. Goodrich

IN TOUGH, off-the-road operations like that shown above, mileage doesn't mean much in measuring tire service. Instead, the yardstick is number of hours a tire works and whether or not worn treads can be recapped, or if sharp, jagged rocks cause serious tread cuts.

Reports from B. F. Goodrich users indicate top performance of BFG tires as compared with other brands. For example, one operator reported over 4,500 service hours from B. F. Goodrich *Universals* vs. only 1,600 hours from another make in identical service.

B. F. Goodrich tires stand out in service for many reasons. Tread rubber is specially compounded to resist cutting. More tires can be recapped because they have double bruise protection in the B. F. Goodrich *double nylon shock shield* . . . layers of nylon cord built in between the tread and the body plies.

Only BFG gives you the added protection of the nylon shock shield; the added savings of (1) longer tire life (2) increased bruise resistance (3) less danger of tread separation (4) more recappable tires. But nylon shock shield costs no extra — you pay no premium!

Another "special" is the new ALL-NYLON tire for tough construction projects, quarry work, strip mining, etc. In all tests, not a single BFG All-Nylon tire blew out, not one flex break occurred!

There's a specially designed off-the-road type B. F. Goodrich tire for every need. See your dealer or write, wire or phone — *The B.F.Goodrich Company, Akron, Ohio.*

Perhaps the best yardstick with which to measure the progress in the pit and quarry industries is that of annual value of production—a figure which has grown steadily, except for a dip in the war years, from $700,000,000 in 1939 to around $2,000,000,000 in 1949. That any heavy industry could so increase its output in a ten-year period as to nearly treble its annual production value is above all else a tremendously impressive demonstration of the progress that has been achieved in the functional design of production equipment. Much of the credit for this phase of progress must be attributed to the skill, imagination, and engineering know-how of the equipment manufacturer.

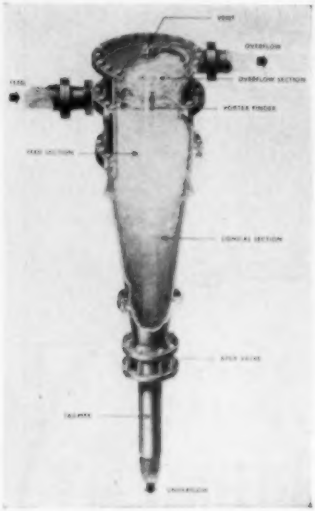
On the following pages may be found descriptions and photographs of many of the new and improved pieces of equipment brought out in 1949. More detailed information may be obtained by writing directly to the manufacturer or by contacting this office. In addition, those persons attending the meetings of the National Sand and Gravel Association or the National Crushed Stone Association this year at the Stevens Hotel in Chicago will have an opportunity to visit the accompanying equipment exposition and to view many of the machines described herein.

As these and other machines go to work in the field, the nonmetallic minerals industries will move forward another notch, producing in greater quantities, better and more cheaply those basic materials so essential to the welfare of our nation.

For addresses of manufacturers of equipment described in this section see page 137.

New Equipment

THE DORR CO. has acquired the licensing and selling rights to the Dutch State Mines' Cyclone in America for all

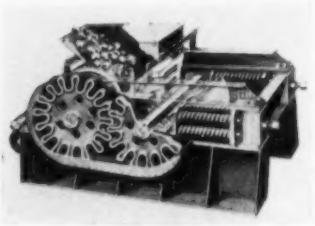


Dutch State Mines' cyclone.

fields except heavy media applications. This newcomer to the nonmetallic minerals industry is applicable, within limits, to problems involving separation, concentration or classification.

In the phosphate rock field the emphasis is on concentration, i.e., the recovery of the P_2O_5 fractions in the most concentrated form and the rejection of the barren sands with a minimum loss of P_2O_5. In other nonmetallic fields, such as sand washing and grading, the emphasis will no doubt be on the use of the device as a "classifier," i.e., to effect a separation or fractionation at one or more predetermined meshes.

PIONEER ENGINEERING WORKS offers a number of improvements in its new line of twin and triple roll crushers. Improvements consist of deeper mounting



Pioneer's new roll crusher.

sills with less obstruction from cross members to provide more clearance for conveyors, a deeper top frame, separately cast star gears and driving gears, and cast steel hubs for the roll shells.

Twin roll crushers are now available in sizes 54x42, 40x22, 30x18, and 24x16. Two sizes of the triple roll are available: 40x22 and 30x18, the latter having just recently been added to the line.

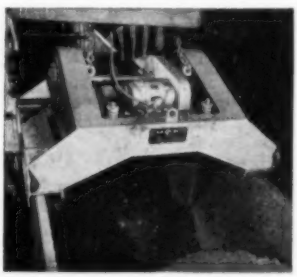
WINCH-LIFT, INC., has developed a new cable-operated dump trailer, the new "Clement 500," which is said to embody new features that will allow the unit to

Winch-Lift's cable-operated dump trailer.

dump at an angle without danger of overturning or twisting the support arms. This cable-operated trailer can be maneuvered into a jackknife position or to spread dump or spot dump at an angle of approximately 60 deg.

The Clement 500 has a lighter body design with a lower center of gravity, and a new rear sheave hanger assembly position which raises the cable lines for freer movement. There is a self-loading fifth wheel which enables the operator quickly to assemble or free the trailer with the minimum of effort.

LINK-BELT CO. has placed on the market a self-contained vibrator unit called the Link-Belt "Car Shaker" designed for rapid unloading of bulk granular materials from open-top, hopper-bottom gondola cars to conventional track



The Link-Belt car shaker.

hoppers serving bulk materials conveying equipment.

Cars do not have to be uncoupled while the shaker is in operation. This permits the movement of cars through the unloading shown as a complete train. Cars are moved into place over the track hoppers, the car gates are opened and the car shaker, which is normally suspended from a hoist, is lowered from the top of the car to begin its operation.

This unit weighs 9500 lbs. complete with a 20-hp. motor wound for three-phase, 60-cycle, 220 or 440 volts a.c.

The Schield Model "M-49" truck-mounted shovel.

SCHIELD BANTAM COMPANY'S Model "M-49" truck-mounted shovel, interchangeable for dragline, clamshell, trench hoe, crane, magnet or pile driving operations, has been recently improved.

The Model "M-49" incorporates such new features as a power-controlled boom hoist for independent power lowering and raising; a triple roller drive chain sealed-in-oil in a new chain case; and trunnion roller pins and bushings of increased diameter size and hub length. New larger cam-type hook rollers are used to reduce roller r.p.m.'s and the amount of wear on bushings. Three hook rollers, two at the rear and one at the front of the trunnion, are used for load distribution. Mechanical controls have replaced hydraulic.

More Information, Please!

CHECK AND MAIL THE CARD BELOW FOR ADDITIONAL INFORMATION ON NEW MACHINERY AND SUPPLIES

1. Transall Carries All. A large bulletin featuring special advantages of Transall belt conveyor systems. Sealed-in lubrication is described and explained. Cutaway views, closeups and sketches supplement this explanation. Tables of dimensions for troughing idlers, flat belt idlers and steel rolls, and price list included. Transall Inc.

2. Thomas "Durable" Dredge Pump. Folder describing a solids-handling pump, including keyed diagram, on-the-job scenes and detailed data on important parts of this pump. Thomas Foundries, Inc.

3. Technical Bulletin No. 3 on Proper Sizing of Excavators and Hauling Equipment. 24 pages. Deals with the proper synchronization of hauling fleet with excavator to obtain maximum output and minimum delay. Analyzes factors affecting efficient operation, and includes performance tables in relation to factors involved. Power Crane and Shovel Association.

4. Never Before a Brick Like This! 4-page bulletin describing Chem Brick. Illustrated with photographs of structures built of this product. Qualities are given and outstanding characteristics are listed. Featured as a low-cost, all-purpose brick. Jackson and Church Co.

5. Centralab Distributor's Parts Catalog—No. 26. Full descriptions and line drawings of rotary selector switches, position selector switches, universal flat switches (patent pending), lever action switches (patent pending), momentary push switches, and medium-duty power switches.. Centralab Division, Globe-Union Inc.

6. "Tag-Master"—The Tagline with Advantages. An exposition of the Morin combination tagline winder and dipper trip. Lists the advantages of this piece of equipment, pictures an actual installation and closeups of the device, and gives names of firms using the Tag-Master. Contains a table of typical applications. Morin Mfg. Co., Inc.

7. Edmont Gloves Pocket Catalog. Contains illustrations and descriptions of some of the many types of Neox-coated, natural rubber-coated and plastic-coated industrial gloves manufactured by Edmont. Edmont Mfg. Co.

8. Temporary Bulletin No. 490 on Types of Flex-Valves. These are described and illustrated, and tables of specifications and material standards are given. Included also are a selection chart of dimensions, prices, etc., installation diagrams, graphs on flow characteristics and capacity, and a list of typical services. Flexible Valve Corp.

9. The Kelley "70-D" Mixer. Flier telling the story of Kelley mixers and their service record at a New Jersey concrete block plant, where they have been in constant operation for seven years. Wittemann Machinery Co., successors to E. B. Kelley Co.

10. Mining for a Profit and Why "Cat" Power Is Best for the Pumping Job. Two booklets; the first features applications of Caterpillar diesel-powered equipment for various kinds of mining operations; the second quotes comments of users of Caterpillar units for pumping on jobs which fully prove the qualities cited. Caterpillar Tractor Co.

11. The Masterplate "Iron-Clad" Concrete Floor. 36-page illustrated booklet giving full information on this process and citing the special features distinguishing it. Contains job pictures and directions for laying this floor. The Master Builders Co.

12. Universal 800 Series Portable Secondary Crushing Plants. A 4-page bulletin (No. U308) presenting Models 808 and 406. Diagrams and a closeup of the plant and a diagram of the Universal Twin Dual rolls supplement the detailed information given in the text. A table of specifications is also included. Universal Engineering Corp.

13. Muehlcisen Perlite Calcining Unit. This 6-page folder lists six "profit-building" advantages of this unit and contains a plan view and dimensions. General data and specifications present a concise description of the unit and what it can do. Muehlcisen Perlite Process, Inc.

14. Lincoln Catalog No. 50. This is a lubricating equipment catalog. It illustrates and describes modern mobile lubrication departments to meet any requirement. Lincoln Engineering Co.

15. Industrial Safety Catalog. 64-page catalog and price list of Willson protective equipment. All types of the firm's eye and respiratory equipment are presented, and technical and reference material is included to aid the user in selecting the proper device for the given purpose. Profusely illustrated. Willson Products, Inc.

16. Metco News, September, 1949. An issue devoted to metallizing packing arms. Brief descriptions of actual applications are given. Metallizing Engineering Co., Inc.

17. Screens Engineered for Industry. 24-page bulletin covering the following: round-rod advantages, vibrating screens, shaker screens, conveyor screens, centrifugal screens, heat drier screens, stationary screens, rotary or trommel screens, special applications, round-rod screens for industry, screen sizes, and data. Copiously illustrated with photographs, sketches, and graphs. Bixby-Zimmer Engineering.

18. Better Stone Crushing with American Hammermills and Rolling Ring Mills. 8-page bulletin featuring these mills. One page devoted to actual photographs showing the proportion of screenings in a typical "ACS" limestone run with 2½-in. grate bar openings. Sectional view, photographs of these units (Series 24 and 30), closeups of parts, and drawings all show outstanding features. Tables of dimensions and capacities and ratings included. American Pulverizer Co.

19. The Flaming FMC 180 Automatic Concrete Block Machine, including a price list, fliers on the FMC 24 mixer and the FMC 12 mixer, block plant setups, and other descriptive leaflets. Diagrams, on-the-job shots and detailed data

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COMPANY

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More Information, Please!

on these pieces of equipment fully describe typical plants which can be set up. Fleming Mfg. Co., Inc.

20. The Transport Mixer. 4-page bulletin describing the design, construction, and performance of a truck mixer equally suited to central mixed concrete and transit mixed concrete. Views of these trucks in action, a drawing, and specifications supplement the text. Concrete Transport Mixer Co., Inc.

21. Townotor Development Release. Flier describing a special "elevator" truck designed to lower materials from a balcony at a manufacturing plant. An explanation of the method of operation is accompanied by a photograph and a graph of the unit. Townotor Corp.

22. New Holland Double Impeller Breakers. 16-page catalog describing models 1212, 2020, 3030, 4040 and 5050 of the New Holland double impeller breaker. 4-page section devoted to describing the principle of dual impact action and how it is built into these units. Cutaway drawings and photographs illustrate construction, method of operation, and typical applications. New Holland Mfg. Co.

23. Ductube Instructions. Leaflet explaining how to use pneumatic rubber tubing for forming ducts in concrete and similar material. Helpful illustrations and many suggestions for best results included. Ductube Co.

24. Increase Your Market with the Dixon Model C Hydraulic Pipe Machine. 4-page folder presenting a hydraulic packerhead pipe machine producing 3-ft. joints in 12 to 32 seconds at lower cost. Table shows the potential capacity of the machine in making bell-and-spigot pipe of various sizes and with crews of varying sizes. (Tongue-and-groove type can also be made on this machine). Another table gives the dimensions of pipe produced with the Model C. Houston Concrete Machinery Co.

25. American Continuous Filter. Bulletin No. 600. Detailed information on the operation and advantages of this "original disc type filter" is supplemented by photographs of the complete unit in several installations and closeups of parts. Included also is a table of general data. Oliver United Filters, Inc.

26. For a Real Lift—the Roebling All-Purpose Sling with Tapered Sleeve Splice. Describes the special splice designed to eliminate the need for "homemade" splicing of sling loops. A table of dimensions and breaking strengths is included. Other types of Roebling loop splices and end attachments are also pictured and described. John Roebling's Sons Co.

27. Bronze and Copper Bearings and Castings. 28-page catalog, illustrated with pictures and charts, giving physical properties and comparative specifications for 27 different bronze alloys and five aluminum and manganese bronzes. Contains many applications of bronze, also sizes and weights of rough and machined "Tiger" bronze bars, a section on babbitt metals, and illustrations of bearings and castings made in the National Bearing Division's plant. American Brake Shoe Co., National Bearing Div.

28. Materials Handling at the Machine. Second revised edition of a booklet by G. G. Raymond and W. C. House. Shows how proper positioning of materials saves unnecessary handlings during production operations. Contains illustrations and descriptions of best positioning for 12 types of equipment. Two illustrative process charts are given as examples for determining the extent of complete handling operation. Lyon-Raymond Corp.

29. The Right Combination for Economical Drilling. Flier describing and illustrating augurs, bits and accessories for all types of drilling, in all sizes. Keyed diagram and explanation of a drilling assembly included. Mobile Drilling, Inc.

30. The M-R-C "Synthe-Seal" Bearing. 4-page bulletin describes a standard-dimension ball bearing with a removable synthetic rubber seal for keeping out dirt, grit and moisture. Sectional views, sketches and specifications are given, along with advantages. Marlin-Rockwell Corp.

31. Truck & Trailer Size & Weight Restrictions. 1950 edition. Pocket-size handbook listing all laws affecting size and weight of trucks, trailers, and truck-trailer combinations for every state and the District of Columbia, up to November 1, 1949. The Four Wheel Drive Auto Co.

32. New and Used Equipment. Bulletin G-4907. Lists and describes available agitators, amalgamation units, ball mills, blowers, cars, centrifuges, classifiers, compressors, concentrators, crushers, crushing rolls, elevators, engines, feeders, filters, flotation machines, gates, jigs, laboratory equipment, machine tools, mine equipment, pumps, screens, tanks, thickeners, transformers, and many other items. Denver Equipment Co.

33. DeLaval Engineering Handbook. Contains practical information on design, operation and installation of pumps, turbines, compressors, and gears. DeLaval Steam Turbine Co.

34. Coffing Spur Gear Hoists and Coffing "Quick-Lift" Electric Hoists. Two fliers, each listing advantages and outstanding features and containing tables of dimensions and specifications. Both are amply illustrated. Coffing Hoist Co.

35. 25-Ton Diesel Electric Locomotives. Bulletin No. A-418. Description of design, construction, outstanding features, etc., given in full. Principal specifications on performance, mechanical equipment, dimensions, standard accessories, and optional accessories included. A table of hauling capacities and a graph on performance curve are also given. Vulcan Iron Wks.

36. Knickerbocker 6-SE. Describes a 6 cu. ft. concrete mixer, giving full details on controls, loading skip, drum discharge chute, water tank and engine. Brief specifications are included for the drum, trunnion rolls, discharge chute, truck frame, countershaft and transmission, lubrication, power loading skip, engine, truck wheels and weight. The Knickerbocker Co.

37. The Transportometer Automatic Continuous Weighing. Contains detailed information on the following devices: The Transportometer, the Transporte-feeder, the Transportoweigher, the Transportdicator, the Transportograph, the Submaster Totalizer and the Transportotrol. Specifications, sketches and diagrams supplement the text. Sintering Machinery Corp.

38. The New Percussion Type Rockbit. Flier describing this new tool—tungsten carbide-tipped—for drilling. Presents major features and lists specifications and prices. Rockbit Sales and Service Co.

39. Flexible Hose. Catalog 39 presents typical uses and data for lightweight hoses in ventilation, dust collection and fume control. American Ventilating Hose Co.

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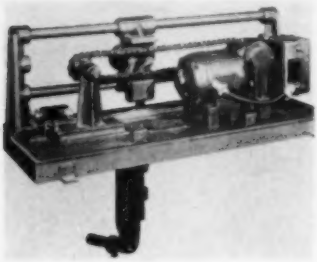
HARDINGE CO., INC., has secured manufacturing and sales rights to an accurate and rugged sampler.

The sampler takes periodic "cuts" (or samples) from a stream of moving material, either wet or dry, at any stage in a continuous process. The unit is entirely automatic and can be set to operate periodically at a variety of time intervals from 5 to 60 minutes. When activated by a time switch, the sample cutter moves horizontally at a constant speed across the stream of moving material, diverting a representative sample into a sampling launder or container. The cutter movement is carefully controlled to avoid stroke speed and length variation during each cutting operation.



The Hardinge sampler.

RAYBESTOS-MANHATTAN, INC., has developed a heavy-duty air hose for service in mining and quarrying operations. According to the manufacturer, the "Condor Homo-Flex" hose line has an extra strong tube compounded of Manhattan oil-proof flexlastics, two braids of heavy-strength member, and a thick abrasive oil-proof cover, yet retains good flexibility. Two sizes—¾-in. and 1-in. inside diameter—are available with working pressures of 350 and 300 lbs.

GENERAL ELECTRIC has brought out two new heavy-duty, general-purpose floodlights.

The new lights, the "Type L-84," rated at 500 watts, and the "Type L-85," rated 1000 watts, can be used for all general-purpose applications and are available for either general lighting service or floodlighting service lamps. A complete range of NEMA types 1 through 5 is provided.

General Electric's heavy-duty flood lights.

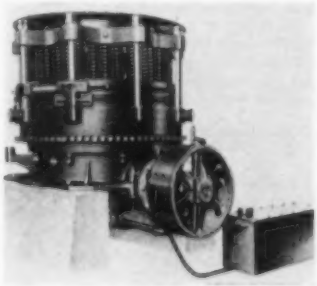
Weather-tight and substantially constructed of heavy-gauge aluminum, each of the new units weighs less than 17 lbs. Noncorrosive materials—aluminum and stainless steel—are used throughout.

The door, hinged for easy relamping, uses three simple swing-type door latches. The heat-resistant door glass is cushioned in a silicone rubber gasket which wraps around the edge of the glass and also seals the joint between the door and the casing. A clamping handle for vertical adjustments is provided so that the floodlights can be serviced completely without the use of tools.

GEORGE MILLERD has perfected a new hammer for the Lippmann hammermill which has four reversible wearing corners. This is an angle hammer entering from the side, leaving the top and bottom solid for crushing. It is claimed that this hammer will produce fine lime as long as there is any crushing bar left.

SMITH ENGINEERING WORKS has placed on the market a new model crusher—the Style S Standard "Gyrasphere."

In this crusher, larger roller-thrust bearings have been relocated at the top of the eccentric and transmit crushing pressures from the bottom of the head directly into the main frame. The eccentric bearings have more bearing area in the upper zone of greatest crushing pressures. The main drive gear is now located at the bottom of the eccentric instead of at the top, assuring improved and more permanent alignment of gears and longer life for these parts. The new model is more accessible for maintenance purposes. The Style S Standard Gyrasphere is available in the 24-in., 36-in., and 48-in. sizes with either coarse or medium bowl.



The Smith style "S Standard Gyrasphere."

CHICAGO STEEL FOUNDRY CO. has developed a heat-resisting alloy known as "Pyrasteel". It is a chrome-nickel-silicon combination developed by the company and is used where the job requires high tensile strength at high temperatures. Pyrasteel may be economically adapted for many high-heat applications such as kiln ends, conveyor screws, clinker coolers, feed pipes and drag chains.

CLIMAX ENGINEERING CO. has added a new model engine, the C-46, to its line of single-cylinder engines in the 4- to 15-hp. range. The C-46 is a heavy-duty industrial type engine. It burns gasoline, natural gas or kerosene.

The Haiss heavy-duty bucket loader.

GEORGE HAISS MFG. CO. has improved the design of its heavy-duty bucket loaders. Improvements include hydraulic controls for easier handling, choice of two-or four-wheel drive from the new high-powered engine, and improved manganese digging propeller assembly. Models 80 and 135 may also be equipped with a lightweight integral swivel belt conveyor which permits discharge of sand, gravel or crushed stone to the left, the right and rear through an arc of 180 degrees. Capacities are 5 to 8 cu. yds. per minute.

The Lima 1002 shovel with 2½ cu. yd. dipper.

LIMA-HAMILTON CORP. has introduced the Lima Type 1002, for shovel, dragline, clamshell and crane operations.

The Type 1002, like its predecessors, is equipped with an air control system. Air is utilized for the hoist, crowd and retract, drag, swing and propel, boom hoist, steering, swing lock, shift from swing to propel, and engine clutch shifter functions. The truck lock and hoist brake are mechanically controlled.

The shovel boom is of welded, box construction, with a flared base to prevent sidesway. It is available in two lengths: one for standard operation and a longer one for high lift operation. The dipper handle is of the inside tubular type with foot casting, multiple sections of racking and welded into a unit. The standard shovel boom is 28 ft. long with a 21-ft. handle. The high lift has a 45-ft. boom and a 32-ft. handle. The shovel is a chain crowd. The dippers are full-capacity, 2½-cu. yd. for the standard shovel and 2-cu. yd. for the high lift.

The basic dragline, clamshell, and crane booms can be lengthened by the addition of inserts of various lengths, which are butt connected. The booms are lattice type and are of all-welded construction. The capacity of the machine as a crane is 60 tons at a 12-ft. radius.

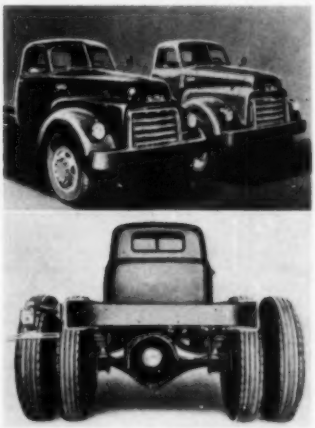
The Quickway model "L" ½ cu. yd. power shovel.

QUICKWAY TRUCK SHOVEL CO. has added a new model to the "Quick-Way" line of truck shovels and cranes. The new model "L" is a ½-cu. yd. power shovel, or 10-ton capacity crane, equipped with heavy-duty 30-ft. folding-type boom.

Powered by an International U-9 motor developing 55 h.hp., the basic machine weighs 12,000 lbs. For rapid clamshell operation, cable speeds are the same on both front and rear drums when lagging is used on the haulback drum. Standard equipment includes drum lagging, hold-in clutch levers with the same operational function as "snap-in" or "toggle-in" clutches, and a combination power trip and automatic tagline winder. Boom extensions are available in 5-, 10-, and 25-ft. sections.

GENERAL MOTORS CORP. in its 1950 GMC truck line will feature stepped-up horsepower in its light- and medium-duty engines, together with a number of cab, engine and chassis advancements. New model series will be introduced in the 1½- and 2½-ton ranges and two new six-wheeler series in the 24,000-32,000 lbs. gross vehicle weight range. There will be two new, lighter diesel tractor series of 45,000 and 55,000 lbs. combination weights, as well as lightweight options in the big 900 diesel series.

For 1950, GMC will extend the advantages of dual-drive design to the mid-



Three GMC 1950 model trucks.

dle-weight range of models with the introduction of two new six-wheeler series, the HCW-400 and HCW-620. Combining great tractive ability with extra load capacity, these six-wheelers are designed for hauling off-the-highway jobs, as well as for regular highway use in states where it is advantageous to have an extra axle for additional load.

The HCW-400 series will have a GVW rating of 24,000 lbs. and a GCW of 35,000 lbs. It will have the 248 engine as standard and the 270 as optional. Equipment for air-operated hydraulic brakes will be optional on the 270 engine. In addition, a four-speed Synchro-Mesh transmission will be standard with the 248 engine and a five-speed constant mesh direct-in-fifth optional, as well as five-speed overdrive and three-speed auxiliary. With the optional 270 engine, the five-speed direct-in-fifth is standard and the overdrive and three-speed auxiliary are options.

The GVW for the HCW-620 six-wheelers will be 32,000 pounds and the GCW 50,000 pounds. In this series, the GMC 360 gasoline engine will be standard and the 426 optional. Hydraulic brakes will be standard with either engine and air brakes optional. The standard transmission will be five-speed direct-in-fifth Syncro-Mesh with overdrive and three-

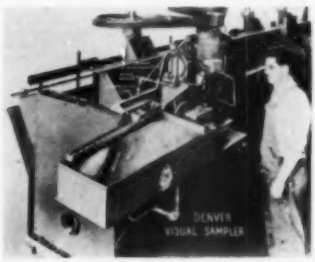
speed transmission as options. Double-acting front shock absorbers are standard on this series.

Both six-wheeler series will have newly designed, highly efficient dual-drive rear axles in which the power is transmitted to both axles by a torque divider containing an inter-axle differential mounted on the forward unit. Alignment is maintained by torque rods and equalizing beams which transmit driving and braking forces to the chassis. Semi-elliptic springs are swivel-mounted on the equalizer beam cross tube, shackled to the front at the frame bracket and sliding at the rear bracket. Available, optionally, at extra cost, will be a lockout mechanism for the inter-axle differential which can be operated by manual control in the cab.

Of great interest to many heavy-duty haulers will be the announcement of two new GMC diesel truck-tractor series which will bring the power of the 2-cycle, four-cylinder GM diesel engine into the lighter models of the heavy-duty range. Designated as the HDCR-640 and 650, these weight-saving diesel-powered tractors will have GCW rating of 45,000 and 55,000 lbs., respectively. They will be offered in three wheelbases of 141, 153 and 165 in.

In GMC's big six-cylinder 900 series diesels, too, there will be new, lighter units for 1950, made possible by many weight-saving equipment options. In total, weight savings made possible by several options will range from approximately 1,200 lbs. on conventional models to about 2,500 lbs. on the 950 six-wheelers.

DENVER EQUIPMENT CO. has developed a "Visual Sampler" that permits continual, instant check, by visual observation, of flotation efficiency. This self-contained unit consists of a Denver-Wilfley table, a Denver suction-pressure diaphragm pump and a daylight type inspection light. The pump and table are driven by one electric motor. Operation: Denver Visual Sampler can be attached to the flotation machine at any point in the flotation circuit but is usually placed to inspect tailings in order to eliminate tailing losses. The Denver suction-pressure diaphragm pump continuously withdraws samples from the flotation cell and pumps them to the Denver-Wilfley table. Products of the table are returned to the flotation cell. The Sampler is available in two sizes.



Denver's visual sampler for flotation circuits.

Marion's 111-M Ward Leonard electric machine.

MARION POWER SHOVEL CO. has announced the addition of the Type 111-M Ward-Leonard electric machine to its line of excavating equipment.

The 111-M Ward Leonard shovel is designed for heavy-duty service in the quarry, metal-mining, and construction industries. As a standard shovel, the machine is equipped with a 3½-cu. yd. dipper and 33-ft. boom.

Control of the various motor speeds and direction of rotation is obtained by the use of the Ward Leonard system of generator voltage control. Each generator is designed for variable voltage control; one supplies power for the hoist motor, one for the swing-and-propel motor, and one for the crowd motor.

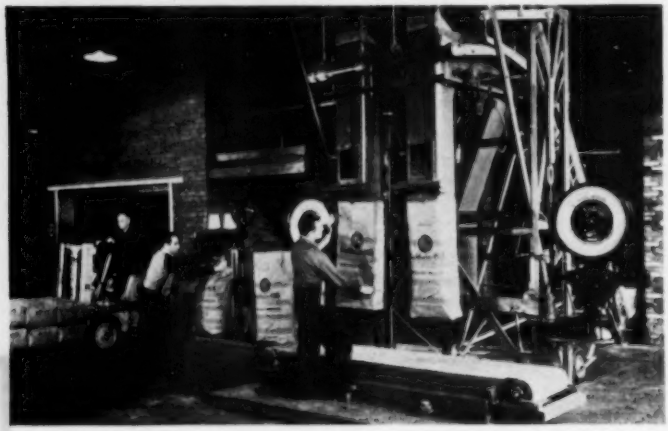
Newly designed, shunt-wound 230-volt, d-c. mill type motors have exceptionally low armature inertia, high overload capacity, and are designed especially for extreme reversing service. The hoist motor is equipped with roller bearings and is force ventilated. The swing-and-propel motor is of the vertical type with ball bearings. The crowd motor, which is of the horizontal type with roller bearings, is bolted to a base which is welded to and forms an integral part of the shovel boom.

The Austin-Western "201" portable crushing and screening plant.

AUSTIN-WESTERN CO.'S "201" crushing and screening plant meets the demand for a high-output portable gravel unit capable of producing especially large amounts of ¾-in. and smaller product. The plant can be operated with an engine of from 85 to 110 hp. The engine can be mounted on the plant and transported without being moved or, if preferred, the plant can be driven by flat belt or propeller shaft from a separate power unit or tractor. All bearings are the anti-friction type. The rear end of the plant is carried on four wheels, each with dual tires.

Bank run gravel is fed into the shovel-loading hopper of the feed conveyor and passed on to the plant conveyor, which distributes the material upon a vibrating screen. Oversize is passed through a 10-by 24-in. jaw crusher, while the undersize is sent to a 24- by 16-in. roll crusher. Products from both crushers are repassed over the vibrating screen.

While intended primarily for operation in gravel, the 201 is said to perform equally well in quarry service when combined with a wide opening jaw crusher set to deliver a 3- or 4-in. product.



The Union Bag and Paper Corp.'s rock wool bagging machine.

UNION BAG & PAPER CORP. is now manufacturing an automatic rock wool packaging machine of twin construction that permits continuous operation. The worker at the right is slipping a Union multiwall bag over the duckbill, which expands and holds the bag firmly in position. An airtight seal is thus formed preventing the escape of dust while bag is being filled. The motion of the duckbill is controlled by air pressure regulated by a foot valve. Before the multiwall bag is released, a pneumatic ram forces the rock wool into the bag in pre-weighed quantities to a predetermined height in the bag; the material being compacted lightly as it is introduced into the bag. The filled multiwall bag is then lowered on to a traveling conveyor that carries it through a sewing head.

Iowa's "single pass" portable crushing machine plant.

IOWA MFG. CO. has developed the "Cedarapids Single Pass Plant", a new crushing and screening plant designed as a low-investment machine for moderate-sized crushing jobs.

Recommended for use where the material is screened into only one size, this mobile plant can be set up close to the job-site to eliminate high hauling costs and provide a source of low-cost gravel and rock. Extremely low operating costs and plant maintenance are claimed to be the result of simple design.

The Single Pass Plant consists of a reciprocating, clutch-controlled feeder and a 6-ft. by 6-ft. charging hopper with adjustable feed gate; a Cedarapids single-deck horizontal vibrator screen, 24 in. by 3 ft.; a Cedarapids jaw crusher, with 10-in. by 16-in., 10-in. by 20-in. or 10-in. by 24-in. jaw opening; (plain or roller bearing); and a 25-ft. delivery conveyor. All units are mounted on a steel-wheeled or pneumatic-tired truck. Use of a Cedarapids twin jaw crusher is recommended where there is an unusually high percentage of large size gravel.

SAUERMAN BROS., INC., brought out a new line of power drag scraper machines during 1949, designed especially to facilitate the excavation of hard-packed materials. Known as Sauerman "Rapid-Shifting" scraper machines, the new units have been designed to give the operator,

The Sauerman "rapid shifting" scrapper machine.

stationed at the scraper hoist, complete automatic control of shifting the tail end of the machine.

The feature of the machine is the three-drum hoist and elevated tail bridle assembly. A bridle cable is stretched between two tail towers, and a bridle frame for the tail block rides on the cable. The third drum of the hoist moves the bridle frame in one direction, the pull of the outhaul cable pulls it in the opposite direction, and the drum brake holds it positioned as desired. Standard operating spans run from 200 to 400 ft.

DU PONT has developed a combination stray current detector and blasting galvanometer known as the "Detect-O-Meter." The instrument has two scales:

The DuPont blasting galvanometer.

one low range from 0 to 2.5 volts allowing detection of voltage of as low as 0.1 volt, and a second range for 0 to 25 volts. It works equally well on either A.C. or D.C. current. The device is used for checking blasting caps and firing circuits before connecting up.

LIPPMANN ENGINEERING WORKS has recently brought out two new gyratory secondary cone crushers—the "Gyra-Gnome 25" and the "Gyra-Gnome 36". Improvements made in these units after extensive study are: completely anti-friction roller bearing movement; settings

Lippmann's "Gyra-Gnome 36" crusher.

from ¾ in. to 1½ in. on the discharging end without changing the heading; oil bath lubrication; and others.

The 25-in. crusher weighs 5000 lbs., has a 32-in. overall height, is 40 in. square and has a capacity of 25 tons per hour at a ¾-in. setting. The 36-in. machine weighs 11,200 lbs., has a 45-in. overall height, is 54-in. square and has a capacity of 50 tons per hour at a ¾-in. setting.

THE DEISTER CONCENTRATOR CO. has added the "Concenco 108-B" revolving feed distributor to its line of pulp distributors. This heavy-duty high-capacity distributor was developed to divide a flowing pulp stream into any desired number of equal or unequal portions. It has the unique feature of

The Deister 108-B revolving feed distributor.

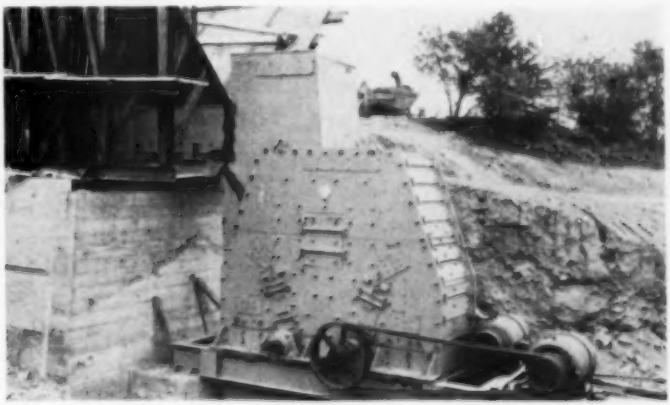
providing for the elimination of any one fraction without disturbing the ratio of distribution between the remaining fractions. This adjustment, accomplished in operation and without the employment of outside auxiliary equipment, permits the shutting down of one of the units being fed by the distributor without disturbing the remaining units.

The Landis 53 cu. yd. semi-trailer unit.

LANDIS STEEL CO. has designed a new semi-trailer unit which will haul 53 cu. yds. The door opening of this unit is 3 ft. 6 in. wide by 15 ft. long and both the safety door locks and the door itself are controlled by air from the cab of the truck. The trailer is 10 ft. 6 in. high, 10 ft. 8 in. wide and about 33 ft. long. The axle is rated at 70,000 lbs.

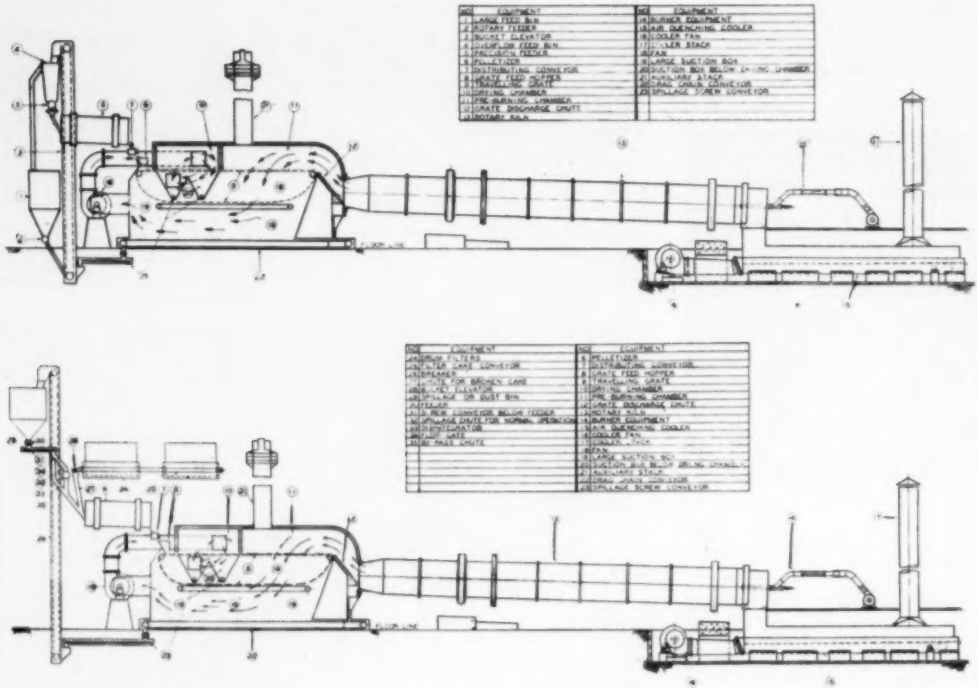
The E. F. Marsh standard portable conveyor.

E. F. MARSH ENGINEERING CO. has placed on the market the "Marco" standard portable conveyor of tubular construction. This unit can be towed by trailer hitch at high speeds over the highway. It will load a 6-ton truck in less than 10 minutes. The tail end was designed for backing into storage piles for manual or gravity loading. It can be equipped with either rubber tires or steel wheels.



The New Holland model 4040 double impeller breaker.

NEW HOLLAND MFG. CO. has put on the market its "Model 4040" double impeller breaker. It is the fifth model in a line of breakers produced by the company designed to reduce stone through impact in suspension. Weighing 65,000 lbs., the new breaker is 17 ft. long, stands 11 ft. 6 in. high, and is 8 ft. 4 in. wide. Twin impellers each weigh 7929 lbs. The Model 4040 can handle material passing a 40-in. square opening. Capacity is 150 to 250 tons per hour.



Top: General arrangement of the dry process for the improved Allis-Chalmers-Lellep kiln system.
Bottom: Same equipment for the wet process.

ALLIS-CHALMERS' basic industries machinery department has developed a new and highly efficient heat recuperating kiln process.

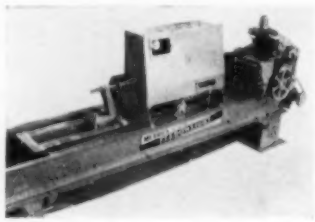
According to company engineers, this new A-C-L (Allis-Chalmers-Lellep) kiln system, for the wet as well as dry process of cement manufacture, is said to be a marked improvement over the original heat recuperating kiln system invented by Dr. O. G. Lellep approximately 22 years ago.

Dr. Lellep, well known thermodynamics and metallurgical engineer, now with Allis-Chalmers as a consultant, has been instrumental in the design of the new A-C-L system.

In principle, the new A-C-L unit receives its feed in the form of pellets approximately ½ in. in diameter, made of moistened dry cement raw mix or crushed filter cake. These pellets are carried to the rotary kiln on a traveling grate passing through a two-compartment chamber. As the porous bed of pelletized raw material traverses this chamber, hot gases from the rotary kiln are passed through the bed of material twice, thereby extracting the maximum quantity of heat from the gases and greatly reducing stack gas volume and dust loss. When the raw material enters the rotary kiln, calcination is approximately 30 percent completed.

With the newly designed A-C-L system, heretofore unknown low fuel consumption of 700,000 B.t.u.'s per barrel of cement clinker is possible for the wet as well as dry process cement manufacture. This low rate of fuel consumption provides additional savings by virtue of reducing the cost of facilities required for the preparation and storage of fuel. Economies are also effected in building construction, as the A-C-L kiln is approximately one-third the length of a conventional long kiln.

MERRICK SCALE MFG. CO. has brought out a new "Feedoweight" used to feed finely pulverized limestone to a calciner and to control feed so that the temperature of the furnace will be maintained within a range of plus or minus 50 deg. F. of firing temperature.



Merrick "feedoweight" for pulverized limestone.

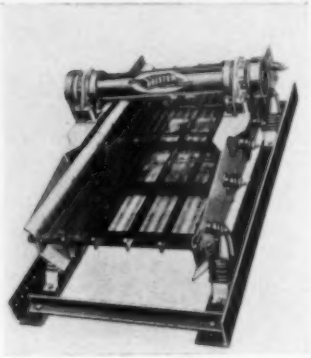
The feeding and control arrangement consists of a Merrick WS Feedoweight, a hydraulic speed shifter, and a pneumatic diaphragm motor link pneumatically linked to a pyrometer mounted on the calcining furnace. Temperature variations as registered by the pyrometer pneumatically position the diaphragm motor link, which in turn actuates the hydraulic speed shifter connected to the variable speed transmission of the Feedoweights, thereby causing a change in Feedoweight belt speed. The delivery of limestone to the furnace is proportional to the speed of the feedoweight belt.

SELF-VULCANIZING RUBBER CO. has placed on the market two new products, the "Selfvulc" anti-abrasion and "Selfvulc" anti-corrosion plastic rubbers, designed to protect machinery and equipment against corrosion and abrasion. These rubber compounds may be applied by any workman on the job and are said to be applicable to all surfaces. The materials are applied cold. The anti-abrasion plastic rubber may be used for resurfacing conveyor belts, while the anti-corrosion plastic rubber finds application for lining tanks and coating machinery.

The manufacturer claims that Selfvulc rubber will not deteriorate with age and will retain its resiliency indefinitely. It withstands heat up to 200 deg. F. and cold to 120 deg. below zero.

DEISTER MACHINE CO. has designed a new screen which is said to prevent blinding in the handling of ag-limestone or other damp sticky materials.

Among new developments in the new

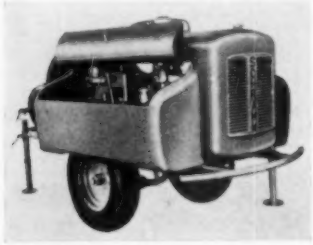


A Deister screen.

screen are a "unitized" head-motion, unusually rapid stroke-cycle, aerodynamic-type construction, and a graduated stroke.

An outstanding feature of this new Deister screen is its graduated stroke. The amplitude of the stroke is greater at the feed end, where the bed of material is deep, and less at the discharge end, where the bed has thinned out. This feature, in conjunction with the high speed and long stroke, accounts for the high capacity and efficiency.

SCHRAMM INC. has added the 105 "Unistage" to its line of compressors. On this unit 90 percent of the engine parts are interchangeable between the four-



cylinder engine and a four-cylinder compressor. This fact reduces the carrying of service parts to the minimum. Compressors are also equipped with the Schramm "Pneumastat," a device designed to insure infinitely variable speeds and the elimination of continuous loading and unloading. The 105 delivers 105 cu. ft. of air.

FORD MOTOR CO. has developed new more powerful six-cylinder truck engine with four-speed synchro-silent transmission as optional equipment on series F-6 Ford trucks. The new six-cylinder engine develops a maximum of 110 hp. and 212-lb.-ft. torque.

It is equipped with free valves having a special cap design on exhaust valve stems which permits free rotation when opening and closing for self-cleaning, better seating and longer valve life.

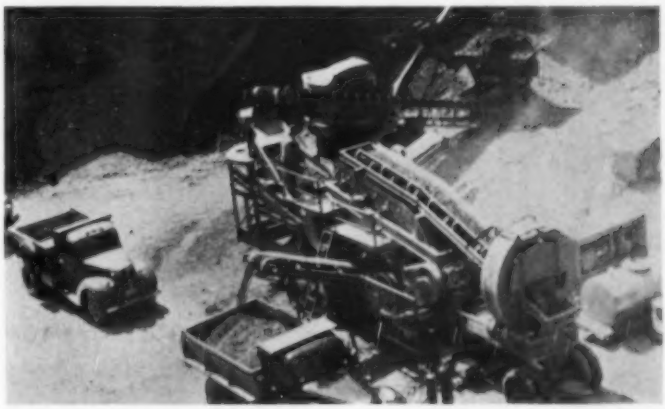
The high lift camshaft is of heavy Ford cast-alloy-iron with large inserted type replaceable bearings, gear driven direct from the crankshaft. A precision machined aluminum timing gear assures quiet operation and longer life.

The balanced crankshaft is of heavy Ford steel with integral counter-weights and has 2.874-in. diameter replaceable type main bearings. Tubular constructed crankpins provide a high factor of strength with minimum weight.

Oliver's model FDE crawler tractor.

OLIVER CORP. has brought out a new tractor-bulldozer for extra heavy jobs. It is a combination Heil bulldozer mounted on an Oliver "Cletrac" Model "FDE" crawler tractor. The rear-mounted, double-drum, cable-power control unit used to operate this dozer assures a constant operating speed for quick and accurate control of the moldboard action. Location of dozer controls permits easy operation from normal position in the tractor seat.

The FDE is diesel-powered and is the most powerful tractor in the Oliver line.



Universal's "239 Junior Q pacemaker" crushing plant.

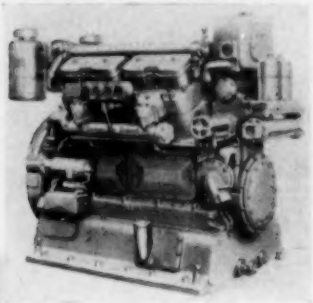
UNIVERSAL ENGINEERING CORP. has incorporated equipment for three stages of crushing, two screens and all needed auxiliaries, into one mobile gravel plant. Main features of the "239 Junior Q PaceMaker" are: swivel feed conveyor with mechanical feeder; gyrating scalping screen; large opening primary crusher; twin dual roll crusher for second and third stages of crushing; gyrating screen for grading all crusher material; and one, two, or three folding delivery conveyors.

The swivel conveyor is used to feed the plant. This makes it possible to work a large pit area without moving the plant and insures a steady flow of gravel to the scalping screen.

MAGNOLIA METAL CO. has brought out a new babbitt for sleeve bearings that are subject to extreme combinations of weight, heat, and shock. "DZL" is recommended particularly for pitman or eccentric bearings of rock crushers.

New Equipment

CATERPILLAR TRACTOR CO. has introduced four new diesel engines, the "D364," "D375," "D386," and "D397." All four engines may be obtained in the marine version, as well as in externally regulated electric sets. The engines are suitable for use in excavators, rock crushing plants, sand and gravel plants, dredges, locomotives, water pumping and many other general applications.



Caterpillar's new D375 diesel engine.

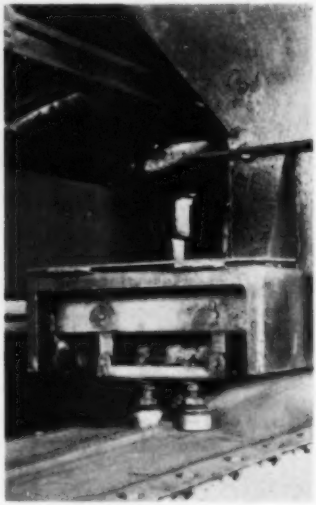
The D375, which is illustrated here, has 8 cylinders arranged in a 60 degree V. It has a 5¼-in. bore and an 8-in. stroke.

LINK-BELT SPEEDER CORP. has recently announced the new crawler-mounted (LS) 18-71 ¾-yd. shovel crane. This machine is convertible to all front end attachments and as a lifting crane has a capacity of 12 tons at 10-ft. radius of load. Standard power unit is a 6-cylinder gas engine producing 67 net hp. at 1450 r.p.m. full load speed.

The Link-Belt speeder ¾ yd. shovel.

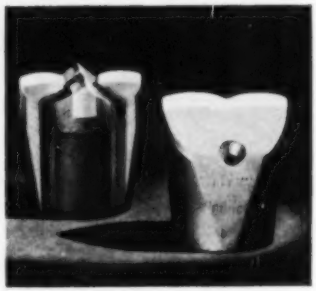
Good balance, strength, and maneuverability are achieved by hook rollers, one-piece welded steel lower frame and positive drive, and lock traction shaft for propelling and steering. Special feature for shovel operation is the positive independent chain crowd, self-adjusting to all boom angles. Extra speed and safety in crane operation is a result of the independent rapid boom hoist which gives the operator control of the boom independent of other operations and locks the boom in a fixed position by a ratchet and pawl.

STEPHENS-ADAMSON MFG. CO. has placed on the market a new device known as the "Zipper" bunker seal, designed to eliminate the dust nuisance at discharge points over long bunkers. The positive seal consists of two rubber flaps with interlocking teeth which are opened and closed by a set of rollers, much like the conventional slide fastener. Present installations have been confined to belt tripper spouts, but the seal is adaptable to other situations.



The Stephens-Adamson bunker seal.

ROCK BIT SALES & SERVICE CO. has developed tungsten-carbide inserts which increase drilling speeds. To overcome premature thread failure, Rock-Bit threads are designed especially for each bit size and application. Better blowing, with lowering of air consumption, has been achieved by the placement of the air holes. The bits are of the detachable type and available in these sizes: 2-point, chisel type, 1½-in. to 4-in. diameter and 4-point, cross bit type 1⅝-in. to 4-in. diameter.



Rock bit tungsten-carbide inserts.

JOY MANUFACTURING CO. has announced the availability of its new "58-BH" rotary type blasthole drilling machine for rock quarries. Designed for operation by diesel or gasoline engine or by electric motor, the 58-BH is self-propelled on crawler treads. It is stabilized at the drilling location by a three-point suspension hydraulic jack system.

The Joy rotary type blast-hole drill.

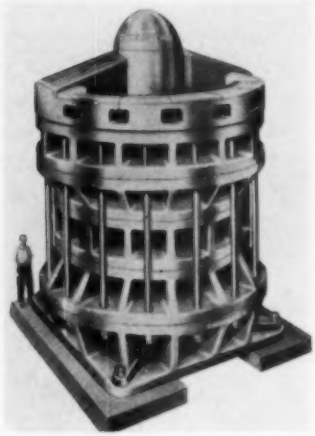
Early performance with this new blasthole machine indicates drilling progress at the rate of 15 ft. or more per hour in hard, dense dolomite and 30 ft. per hour while drilling through ordinary limestone. The normal diameter of the hole drilled by the 58-BH is 6¼ in. to any depth required in rock quarry work.

GARDNER-DENVER CO. has improved the design of its 45-lb. class sinker. Known as the S48, this new sinker is especially suitable for use with modern tungsten carbide rock bits.

Designed for either wet or dry drilling, the S48 can be changed from wet to dry or to automatic air-operated water control merely by changing the easily-removed gland and tube. The conversion is made without taking the drill apart, and without changing the backhead.

Gardner-Denver new 45 lb. sinker.

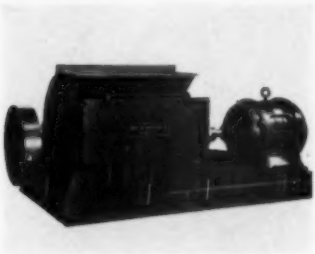
NORDBERG MFG. CO. has built a 54-in. gyratory crusher which is said to be the most massive machine of its type



The Nordberg 54 in. gyratory crusher.

and size ever built. It weighs in excess of 1,000,000 lbs. and was built especially for tough crushing operations.

THE AMERICAN PULVERIZER CO. has brought out a new hammermill for use in the agstone industry. Six reversible hammers positioned in rows are used in this hammermill. In addition, it is

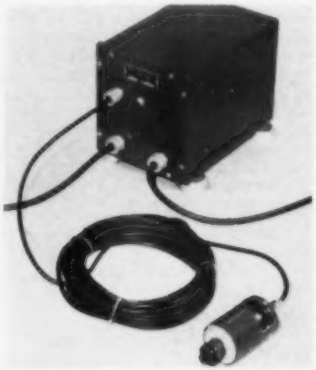


American Pulverizer hammermill.

equipped with a metal trap which is accessible through a door facing the front. The mill is constructed of welded heavy plate and is directly connected to the motor.

BUFFALO ELECTRONICS CORP. has designed a new electronic flow-detector control system, known as "Signa-Flo," which automatically synchronizes the flow of any number of materials and monitors the flow of each ingredient in any blend or mix. Flow stoppage of any one ingredient shuts off the flow of all others. When the stoppage is cleared, Signa-Flo automatically resumes operations. A stoppage is indicated by changing lights on a panel and by a horn signal.

No change in the lighting of the panel gives assurance that production is proceeding smoothly. An indicating panel



Buffalo Electronic's flow detector.

may be installed in the office of the superintendent or other key personnel, enabling that person to keep constant check on the various phases of the operation. In its present form it is best suited to blending or mixing of pulverized and similar materials.

AMERICAN OPTICAL CO. has developed a new line of twin cartridge respirators designed to provide protection against seven respiratory hazards through

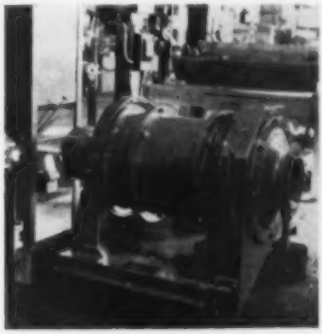
American Optical twin cartridge respirators.

a basic face piece and seven interchangeable filters.

The company states that the seven filters protect workers against (1) a combination of all dusts, (2) organic vapors, (3) acid gases, (4) combined acid and organic gases, (5) ammonia, (6) combination of organic vapors and all dusts, and (7) metal fumes.

The basic face piece of the new respirators is molded from durable rubber and has a new rolled edge that curves inward to give a snug fit without leakage. Other features include a new flexible fitting brace for shaping the respirators to individual features, a highly efficient inhalation and exhalation system, and increased field of vision through thinner filler cartridges.

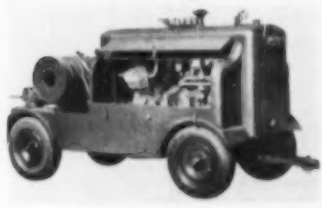
THE MINE AND SMELTER SUPPLY CO. can now supply a small 18- by 30-in. Marcy rod mill as part of a laboratory



A laboratory model Marcy rod mill.

unit for testing work of sand and gravel deposits with regard to their use for manufactured sand. The unit includes a 5-cu. yd. steel bin with adjustable gate and a small feeder discharging directly into the mill drum feed with interior scoop in the mill. This mill is equipped for end peripheral discharge. By removing the housing and closing the discharge ports with the closure provided, the mill reverts to an open-end rod mill. The laboratory unit can also be furnished complete with crusher and small belt feeder ahead of the bin and with the mill in closed circuit with the laboratory classifier.

DAVEY COMPRESSOR CO. has brought out a new line of custom-built heavy-duty compressors known as the "Air Chief Airistocrats." Features included on these custom-built models are extra-heavy welded steel vibrationless frame; electric starting; fenders; hand parking brakes; and electric service brakes. The



A Davey custom-built compressor.

latter can be connected to the braking system of any vehicle used to tow the compressor.

Large tool boxes are located on each side of the trailer. These are 80 in. long, 60 in. wide and 22 in. deep. An additional tool compartment at the rear carries steels up to 10 ft. in length, suspending them beneath the compressor on especially designed brackets integral with the frame.

The Model 105 Airistocrat delivers 100 c.f.m. at 100 lb. pressure. It is 124 in. long, 66 in. wide, 68 in. high and weighs 4100 lbs.

New Equipment

ARKELL AND SMITHS recently developed an expendable pallet for use by the multiwall bag industry. Advantages

Arkell and Smiths new expendable pallets.

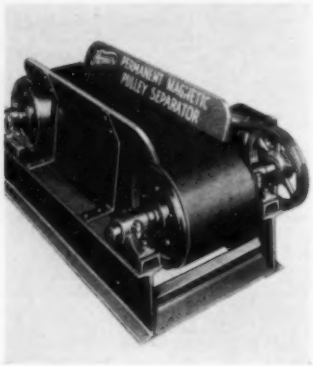
of this method of palletization are: standard fork trucks may be used, making it unnecessary to change to tubular forks; no upcharge to the customer for palletized forms; all bags are laid flat instead of being folded over; and the cores alongside the fork openings prevent blocking of the fork openings in shipment. The standard pallet size is 48 by 48 in.

CHICAGO PNEUMATIC TOOL CO. has developed a new light wagon drill for mounting sinker drills of 55-lb. class or 3-in. drifters. The "G-150" is designed for increased footage in one-man operation. Features include the following:

Chicago Pneumatic's light wagon drill.

longer steel changes (6 ft.) materially increasing actual throttle time; a powered steel puller which eliminates wrenching of steel and loss of holes in bad drilling ground; a positive and uniform feeding pressure said to promote faster unit drilling speed with lower air consumption per foot drill; and a universal type saddle, adjusted laterally on the cross bar, which assures quick positioning for drilling at any angle. A sliding cone allows adjustment for uneven ground conditions.

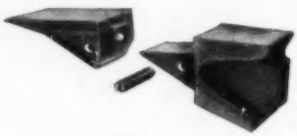
THE HOMER MFG. CO., INC. has introduced a permanent non-electric magnetic separator designed to fill the need for an automatic, self-contained portable or stationary tramp metal separator. The Homer "Unit Type" separator can be used wherever there is need for tramp metal separation, and is ideal for purification of very fine materials. It can also be used to turn the direction of flow of material from a belt conveyor or chute, and at the same time automatically eliminates tramp metals. These units are so de-



The Homer non-electric magnetic separator.

signed that the magnetic pulley can be used either as the driving pulley or as the idler, and are available in pulley diameters of 12, 15, 18, 20, 24, and 30 in., with belt widths ranging from 4 to 60 in.

THE H. & L. TOOTH COMPANY, pioneer manufacturer of two-part teeth for excavating equipment, is now in full production on the "Flex Pin" type of connection for all sizes of shovels from



H & L shovel teeth.

the ½-cu. yd. size to the large quarry shovels. The Flex Pin is said to provide a quick-change positive locking connection for the replaceable point, and reduces to the minimum the danger of losing points. A further protection is inherent in both the points and adapters, which being made of alloy steel, are subject to magnetic attraction.

H. & L. points are designed to stay sharp without the necessity of reversing and are made of high-grade forged alloy steel, heat treated to insure toughness and maximum resistance to wear. Adaptations are available for all types and makes of excavating equipment.

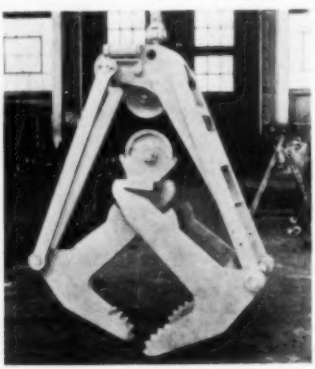
H. & L. Tooth Company has a large modern plant located at 1540 S. Greenwood Ave., Montebello, Calif., devoted entirely to the manufacture of teeth for excavating equipment.

R. G. LeTOURNEAU'S E16 "Tournahopper" is powered by a C Roadster "Tournapull" prime mover and has speeds ranging from 3 m.p.h. to over 30

The Le Tourneau "C" Roadster Tournapull.

m.p.h. A bottom-dump hauling unit, this rig has a capacity of 16 tons or 15 cu. yd. It is available with GMC 6-71, Cummins HB 1600, or Buda 6 DC 844 engine.

THE WELLMAN ENGINEERING CO. has introduced a 5-ton grab with a 4-ft. 6-in. spread specifically designed and engineered for hard service. Made of high-strength steel, this stone grab is welded



A Wellman 5-ton stone grab.

into one-piece construction at points of shock and wear. Welded construction eliminates excess weight and insures maximum strength. The grab weighs only 2200 lbs., so that the loaded grab can be safely handled on a ¾-yd. crawler crane.

THE MILFORD TOOL CO. has developed a carbide rock bit which is said to reduce drilling costs 50 to 60 percent over steel bits. The bit is offered in sizes ranging from 1⅝- to 2½-in. diameter in ⅛-in. increments. The company states that their drills will increase drilling speeds by 20 percent or more.

DIRECTORY OF MANUFACTURERS OF EQUIPMENT DESCRIBED IN NEW MACHINERY SECTION

(See pages 124-136)

Allis-Chalmers, Milwaukee, Wis.
American Optical Co., Southbridge, Mass.
The American Pulverizer Co., 1059 Macklind Ave., St. Louis 10, Mo.
Arkell and Smiths, Canajoharie, N. Y.
Austin-Western Co., Aurora, Ill.
Buffalo Electronics Corp., 429 Southwood Drive, Kenmore 17, N. Y.
Caterpillar Tractor Co., Peoria 8, Ill.
Chicago Pneumatic Tool Co., 6 E. 44th St., New York 17, N. Y.
Chicago Steel Foundry Co., Kedzie Ave. and 37th St., Chicago 22, Ill.
Climax Engineering Co., Clinton, Iowa
Davey Compressor Co., Kent, O.
The Deister Concentrator Co., 911 Glasgow Ave., Fort Wayne, Ind.
Deister Machine Co., Fort Wayne, Ind.
Denver Equipment Co., 1400 17th St., Denver 17, Colo.
The Dorr Co., 570 Lexington Ave., New York 22, N. Y.
E. I. Du Pont de Nemours & Co., Inc., Wilmington, Del.
Ford Motor Co., Dearborn, Mich.
Gardner-Denver Co., Quincy, Ill.
General Electric, Schenectady, N. Y.
General Motors Corp., Pontiac, Mich.
George Haiss Mfg., Co., Inc., 141-144th Sts. on Park Ave., New York 51, N. Y.
Hardinge Co., Inc., 240 Arch St., York, Pa.
H & L Tooth Co., 1540 S. Greenwood Ave., Montebello, Calif.
The Homer Mfg. Co., Inc., Lima, O.
Iowa Mfg. Co., Cedar Rapids, Iowa
Joy Mfg. Co., Henry W. Oliver Bldg., Pittsburgh 22, Pa.
Landis Steel Co., Picher, Okla.
R. G. LeTourneau Inc., Peoria, Ill.
Lima-Hamilton Corp., Lima, O.
Link-Belt Co., 307 N. Michigan Ave., Chicago 1, Ill.
Link-Belt Speeder Corp., 307 N. Michigan Ave., Chicago 1, Ill.
Lippman Engineering Works, 4603 W. Milwaukee St., Milwaukee 14, Wis.
Magnolia Metal Co., 18 W. Jersey St., Elizabeth 4, N. J.
Marion Power Shovel Co., Marion, O.
E. F. Marsh Engineering Co., 4030 Chouteau Ave., St. Louis 10, Mo.
Merrick Scale Mfg. Co., 180 Autumn St., Passaic, N. J.
Milford Tool Co., 110 Gulf St., Milford, Conn.
George Millerd, New London, Wis.
The Mine and Smelter Supply Co., P.O. Box 5270 Terminal Station, Denver 17, Colo.
New Holland Manufacturing Co., Mountville, Pa.
Nordberg Mfg. Co., Milwaukee 7, Wis.
The Oliver Corp., 19300 Euclid Ave., Cleveland 17, O.
Pioneer Engineering Works, 1515 Central Ave., Minneapolis 13, Minn.
Quickway Truck Shovel Co., Denver, Colo.
Raybestos-Manhattan, Inc., Passaic, N. J.
Rockbit Sales & Service Co., 2514 E. Cumberland St., Philadelphia 25, Pa.
Sauerman Bros., Inc., 522 S. Clinton St., Chicago 7, Ill.
Schield-Bantam Co., Waverly, Iowa
Schramm, Inc., West Chester, Pa.
Self-Vulcanizing Rubber Co., 605 W. Washington Blvd., Chicago, Ill.
Smith Engineering Works, Milwaukee 12, Wis.
Stephens-Adamson Mfg. Co., Aurora, Ill.
Union Bag & Paper Co., Woolworth Bldg., New York 7, N. Y.
Universal Engineering Corp., 625 C Ave., N.W., Cedar Rapids, Iowa
The Wellman Engineering Co., 7014 Central Ave., Cleveland 4, O.
Winch-Lift, Inc., First National Bank Bldg., Shreveport, La.

Japanese Cement Industry Described in Report

Japan, one of the world's five leading cement-producing countries in the decade 1935-45, requires additional coal and improved transportation to revive this important industry, according to the U. S. Bureau of Mines.

Issued as Special Supplement No. 30, Mineral Trade Notes, is a report based on data from official Japanese sources compiled by Lawrence G. Houk, Bureau mining engineer while he was a scientific consultant assigned to the Natural Resources Section, G.H.Q., Supreme Commander for the Allied Powers in Tokyo.

Despite Japan's leading position in the manufacture of cement during 1935-45, the country's potential capacity for making cement has never been utilized fully, according to the report. The country's peak output came during 1940 when 6,048,499 metric tons of all types of cement were produced. During 1946, the first peacetime year, production was only 927,089 metric tons, which represented only about 10.5 percent of the total capacity of 37 plants.

Ample supplies of coal, limestone, clay, shale, and gypsum—raw materials for the manufacture of cement—are available on the home islands of Japan, but the lack of shipping space for these raw materials and for the distribution of finished products has caused delay in rehabilitating the industry. The country's 37 plants are well distributed on the islands, 22 being on Honshu, 12 on Kyushu, two on Hokkaido, and one on Shikoku. Twenty-seven out of 30 plants having the necessary equipment utilize waste heat to produce electrical energy, while seven plants have no facilities for producing electricity.

Only slight damage was done to the cement industry of Japan during World War II. Major equipment of only two plants was damaged by explosive bombs, and five other plants were damaged by incendiaries. However, all war damage was repaired within six months after the end of the war.

Portland cement accounted for 95 percent or more of the total production in the decade 1925-35, but the proportion of other types of cement has increased gradually since 1935. In 1946, four-fifths of the 927,089-ton production was portland cement. The production equipment included 84 rotary kilns, 132 raw grinding mills, and 120 finishing mills.

Descriptions of equipment and specifications for cement manufacture are included in the Bureau report along with tables of production data, manufacturing costs, and distribution of finished products.

A free copy of Special Supplement No. 30 to Vol. 27, No. 6, Mineral Trade Notes, *Cement Industry of Japan*, may be obtained upon application to the Bureau of Mines, Publications Distribution Section, 4800 Forbes Street, Pittsburgh 13, Pa.

Fly-Ash Rises from Status Of Nuisance to Cost-Saver

Fly-ash from the Commonwealth Edison Company's smokestacks in Chicago, sold through the Combustion By-Products Company, also of the Windy City, is being shipped to Montana to make the concrete for the Hungry Horse Dam, reputed to be the fourth-largest such structure in the world.

Delivered at the construction site at $11.50 a ton, the cost of fly-ash is approximately $10 less than the delivered cost of a ton of cement. It is one of the more recently developed pozzolanic materials, and new sources are constantly being sought by the United States Department of the Interior. Fly-ash is being used at Hungry Horse because a large supply can be obtained in Chicago at a lower cost than from other sources.

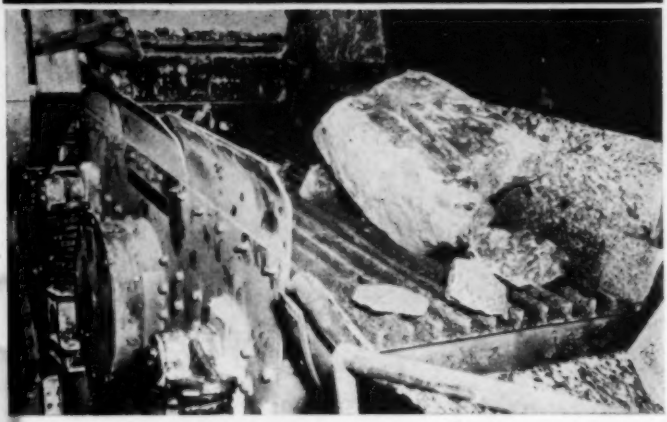
When completed (in approximately three years), Hungry Horse Dam will contain about 2,900,000 cu. yds. of concrete. Into this structure will go more than 324,000,000 lbs. of cement and 261,000,000 lbs. of pozzolanic material (fly-ash). Had the dam been built without pozzolan, it would have required 685,000,000 lbs. of cement. The old ratio for dam construction was 4 sacks of cement for each cubic yard; the new mixture calls for 2 sacks of cement (118 lbs.) and 90 lbs. of pozzolan per cu. yd.

It is estimated that the substitution of fly-ash for a large portion of cement will save nearly $3,500,000, and that another $1,500,000 will be saved in the construction of less piping for the cooling system and in the shortening of the hardening period. By reducing the cement content of the concrete, much less heat is generated in the hardening process. Consequently, less costly cooling systems are required. The hardening time—28 days for ordinary concrete—will be cut to 22 days, another important saving. Moreover, the finished product is stronger than the type of concrete made without pozzolan.

Limestone Products Company of Cleburne, Tex., has amended its charter of incorporation, issuing remaining 50,000 shares common no par value stock (paid in all).

INDISPENSABLE

FOR SCALPING—SIZING—CONVEYING



HEAVY DUTY SCALPER

Talk about performance! This Hewitt-Robins Heavy Duty Scalper is handling 5 ft. cubes of 90 lb. material—11,250 lb. lumps—at the rate of 110 tons an hour—and doing it in continuous 16-18 hour operation!

Its 2-bearing vibrator is "full floating"—no load damage to bearings or shaft. And this Scalper won't shake the building because heavy-duty coil springs, which support the frame, absorb impact-vibration. A truly rugged machine for the toughest scalping jobs.

VIBREX STYLE M SCREEN

For accurate, low-cost processing of the *sizes* you want, in the *capacity* you need, at the *speed* you must have. Vibrex® Screens use the "circle-throw" principle originated by Hewitt-Robins. Two positive strokes with every revolution of the counterweights. And the stroke is adjustable—at our factory or in your plant—as explained in Bulletin No. 122-B.

Made for overhead suspension or floor mounting—whichever best fits your needs.

SECTIONALIZED CONVEYORS

Hewitt-Robins Sectionalized Belt Conveyors enable you to select a conveyor system *exactly suited to your needs* . . . in length, height, belt width and capacity. All components, including head and tail section, are Hewitt-Robins-engineered for top efficiency and low operating cost. Best of all, Hewitt-Robins makes both the conveyor machinery *and* the belt.

Remember—only Hewitt-Robins takes full responsibility for *all the elements* of a belt conveyor!

See these units in operation at Booths 50 to 54 at the Aggregate Shows, Stevens Hotel, Chicago.

ROBINS CONVEYORS DIVISION

HEWITT-ROBINS INCORPORATED

270 PASSAIC AVE. · PASSAIC, N. J.

A.I.M.E. Sessions

(*From page* 99)

10,000 tons of commercial pyrophyllite schist, with probable reserves of 75,000 tons in the deposit.

Production of agricultural gypsum in the form of gypsite in San Joaquin Valley in California was reviewed in a paper by W. E. Ver Planck Jr. of the California Division of Mines. Upwards of 350,000 tons is being produced and sold annually in the valley. The gypsite runs from 50 to 80 percent gypsum, impurities being clay, silt and calcium carbonate. Current practice is simply the use of power scrapers to remove the overburden and for excavating the material. No processing or other treatment is employed, with the exception of one operation which has installed a vibrating screen and hammermill.

Recent industrial-mineral developments in the Columbia River Basin were outlined in a paper by A. O. Bartell, managing engineer of the Raw Materials Survey, Portland, Ore. Included were two rock-wool plants, one at Dallas, Ore., the other at Longview, Wash.; the new expanded shale lightweight aggregates plant under construction by the Smithwick Concrete Products Co. at Portland; and a small dimension-stone quarry at Sublimity, Ore.

Engineered for Efficiency

(*From page* 104)

and the primary crushers. The remaining conveyors, washing equipment, screens and the double-roll crusher are controlled at No. 2 station. Equipment used for this purpose was manufactured by the Allen Bradley Co. In the opinion of C. E. Hogeboom, company engineer, this feature substantially contributes to the decreased labor requirements at the Algonquin plant, as compared with other Consumers Co. installations.

As previously mentioned in this article, operations were carried on to a limited extent during the summer and fall months of last year. Finished material was loaded into cars from stockpile with an American clamshell-equipped railway crane. A Vulcan steam locomotive of ancient vintage, brought out after three years of retirement, was used to haul the cars. With the completion of the loading bins this operation is, of course, entirely superseded. A modern, heavier locomotive will replace the old one.

Superintending of the Algonquin operation is capably handled by Roy Jackson. He is assisted by Harry Gassmund, formerly of the Elmhurst-Chicago Stone Co. The central offices of Consumers Company are located in Chicago. Gordon M. Davie is president of the firm; Charles J. O'Laughlin, vice-president; L. M. Bowden, secretary; and E. F. Johnson, treasurer. C. .E Hogeboom is engineer.

Labor Developments

(*From page* 105)

it is 1½ percent from each. The employer continues to be required to deduct the employees' contributions from their pay and to forward them together with his own contributions to the Bureau of Internal Revenue.

This is the first rise in the federal social security tax since the law first became effective in 1935. Although that original legislation provided for increases in that rate every three years, every time an increase became due, the Congress postponed it. However, from now on, it appears quite likely that further increases will occur.

Under the present law, an increase to 2 percent each for the employer and employees is scheduled to go into effect in 1952; but it is being freely predicted that the Social Security Act will be amended in the next session of the Congress. This has been made more likely by the pension settlements in the automobile and steel industries under which the employers would save a great deal of their pension cost if the old age Social Security benefits are liberalized.

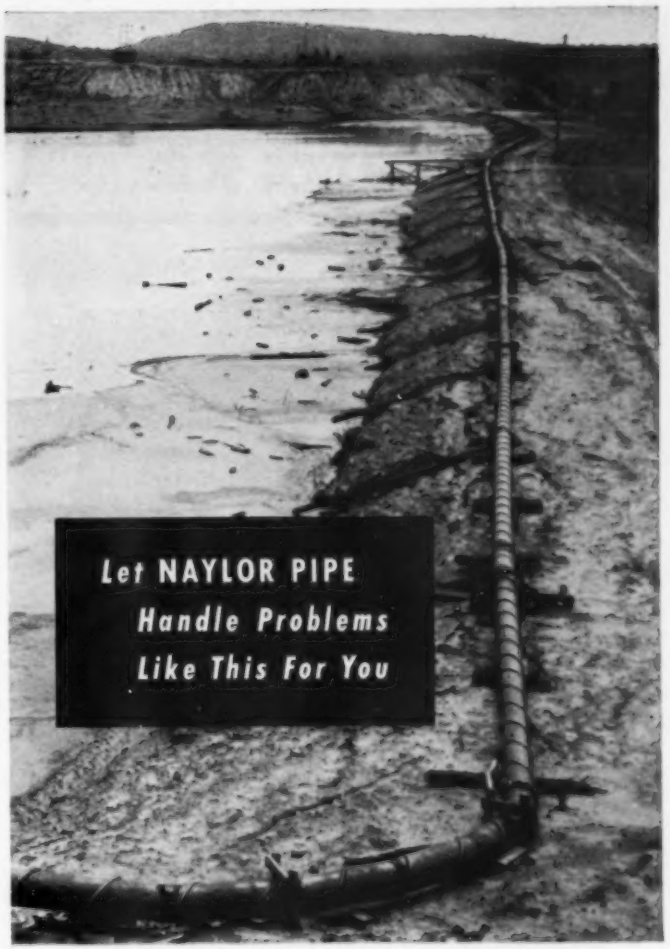
Liberalizing amendments have already passed the House of Representatives, and if they are approved by the Senate, employers and employees would be required to pay a 2 percent tax on earnings up to $3600 a year beginning January, 1951.

Vacation Stamp Plan

The recent agreement between the Mason Contractors' Association of St. Louis and the Bricklayers Union demonstrates again that in collective bargaining there is no end to ingenuity .

Providing vacations for employees in the building trades, who characteristically work for a great many different employers during a year, has generally been regarded as an almost impossible problem. Vacation plans such as are used in other more stable industries can not be adopted. But in St. Louis they found a way.

The "vacation stamp" plan pro-



The tailings line shown here is typical of the way Naylor pipe fits into the mining picture. Naylor is the lightweight pipe with the exclusive Lockseam Spiralweld structure that makes it stronger and safer than other lightweight pipe. It's the practical, economical answer in mining service on high and low pressure water lines, air lines, hydraulicking, ventilating, suction lines, sludge lines, drainage as well as tailings lines. Sizes range from 4" to 30" in diameter—thickness from 14 to 8 gauge—all types of fittings, connections and fabrications. For details on Naylor Pipe and Naylor Wedge-Lock Couplings, write for Catalog 44.

NAYLOR PIPE COMPANY
1257 East 92nd Street, Chicago 19, Illinois
New York Office: 350 Madison Avenue, New York 17, N. Y.

"Trouble-free screening is a habit with these SECO VIBRATING SCREENS"

says Sherman B. Saunders of
W. F. Saunders & Son, Nedrow, N. Y.

The Seco vibrating screen pictured above has been on the job over nine years in the modern sand and gravel plant of W. F. Saunders & Son, Nedrow, N. Y. Not only does it do a perfect job of screening—but it still operates smoothly and has never been shut down for repairs.

Here you see the second Seco screen in use in the Saunders plant. This Seco screen was purchased because of the trouble-free performance record of the first one installed over nine years ago. Together they produce about 120 tons of sand and gravel per hour. Everywhere, on all types of screening jobs, from ag-line to rip-rap, Seco screens are winning acclaim on performance.

Let Seco screening experts help you get trouble-free screening results. Models to fit every requirement. Write Dept. L for new Seco Catalog No. 203.

SECO VIBRATING SCREENS

SCREEN EQUIPMENT CO., INC.

1732 WALDEN AVENUE BUFFALO 21, NEW YORK

In Canada, United Steel Corp. Ltd., Toronto, Ont.

vides that each contractor will pay the employees in addition to their regular wages "vacation stamps" equal in value to 3 per cent of their wages. The employees can redeem these stamps as vacation pay after June 1 of the year following the 12 months in which they were earned.

The plan is administered by a Joint Arbitration Board composed of an equal number of employer and union representatives. The plan has the principal advantage of spreading the vacation cost among all of the employers for whom the employee has worked during the year.

Municipal Construction

(*From page* 121)

Our tentative paving program for 1950 includes the following work:

Street paving and resurfacing	$ 816,000
Alley paving	300,000
New curb and gutter	120,000
New sidewalk	110,000
Sidewalk repairs	100,000
Total	$1,446,000

GORDON E. BODIEN
Paving Engineer

NEW YORK, N. Y.—As part of the general program for providing improved traffic facilities in the city of New York, the Department of Public Works found it necessary to replace a number of bridges which have been in existence for many years and which have inadequate roadway widths or which have become obsolescent and require excessive maintenance costs to keep them in operation. Current bridge projects which are a part of our program of reconstruction include the Brooklyn Bridge over the East River, estimated cost of $6,818,000; the Unionport Bridge over Westchester Creek, estimated cost of $4,575,000; the Eastern Boulevard Bridge over the Bronx River, estimated cost of $2,413,000, and the New Vernon Avenue Bridge over Newton Creek at an estimated cost of $7,890,000.

FREDERICK H. ZURMUHLEN
Commissioner of Public Works

PHILADELPHIA, PA.—Beginning in 1946, the city of Philadelphia has been carrying on at full speed a comprehensive program of highway improvements of various kinds. To date, capital funds amounting to a total of $31,300,000 have been provided. All of this amount will have been expended or encumbered by the end of 1950, excepting the sum of $5,000,000 being held in reserve for the Pennsylvania Boulevard project.

The improvements being made under this program include:

(1) Acquisition of rights-of-ways	$ 850,000
(2) New bridge construction	3,650,000
(3) City-state highway projects	8,900,000*

*This amount represents the city's share of the total cost. The contribution by the commonwealth covering such projects is in excess of $40,000,000.

(4) Special arterial highway construction	750,000
(5) Paving and repaving, including new residential streets	17,150,000

The city-state highway program mentioned under item 3 will be expanded to include the construction of the Schuylkill River Expressway and the Roosevelt Boulevard and Vine Street connections thereto, in conjunction with the completion of the Pennsylvania Turnpike Extension to King of Prussia and the connecting link between this point and the city of Philadelphia. The overall cost of this construction may reach $75,000,000.

In addition to the city's expenditures for highway improvements, which have averaged between $5,000,000 and $6,000,000 a year and will probably continue at this level until 1951, the sum of $3,820,000 was spent for highway maintenance in 1948, and $4,021,000 in 1949. The cost of similar work to be done in 1950 and '51 will be about $4,000,000 in each year.

The high construction costs of '46-'48 actually retarded our construction program to some extent. Recent bidding in 1949 has been more favorable, however, and it is our intention to keep moving ahead with this program because of the urgent need of the work being done.

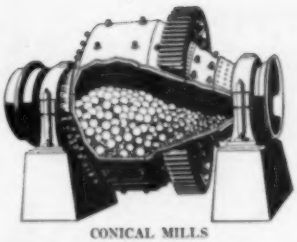
THOMAS BUCKLEY
Director of Public Works

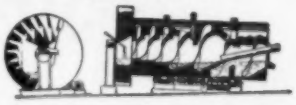
PORTLAND, ORE. — In 1948 we laid oil mat on a little more than 100 miles of street, covering 1,055,100 sq. yds., at a cost of $197,800, or 18¾ cents a sq. yd. This required 244 cu. yds. of ¾-in. bank gravel, 1,541 cu. yd. of 3-in. bank gravel, and 23,850 cu. yds. of crushed rock in sizes from dust to 3-in. in size, 18,565 yds. of it being the ¼-in. to ½-in. grade.

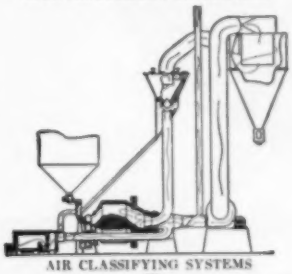
In 1949 the proportions of the materials were practically the same but the total amount spent was only $155,425 and the cost per sq. yd. was 20¼ cents.

The forecast for 1950 and 1951 is that the quantities will increase about 10 percent each year over the 1948 figures.

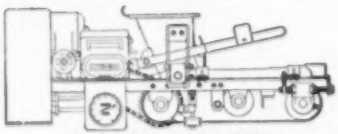
BEN S. MORROW
City Engineer

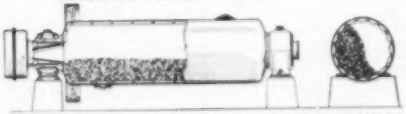

CONICAL MILLS

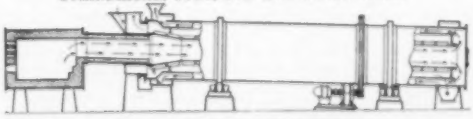

COUNTER-CURRENT CLASSIFIERS


AIR CLASSIFYING SYSTEMS

THICKENERS, CLARIFIERS, FILTERS


CONSTANT-WEIGHT FEEDERS


CYLINDRICAL, TUBE, ROD AND BATCH MILLS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NEW YORK 17—122 E. 42nd St. • 205 W. Wacker Drive—CHICAGO 6
SAN FRANCISCO 11—24 California St. • 200 Bay St.—TORONTO 1

9 Month Test Shows

SAVING $32,196.51 ON GRINDING MEDIA with

SHEFFIELD

MOLY-COP

TRADEMARK REG.

COPPER-MOLYBDENUM-ALLOY

Grinding Balls

Finer Structure—Hard to the core!

Changing over to Sheffield Moly-Cop Grinding Balls in their six 8'x6' Hardinge Ball mills saved one mining company $32,196.51 on the cost of grinding copper tailings on a 9-months comparison with the cheaper forged balls previously used. The harder, tougher Sheffield Moly-Cop Balls lasted so much longer that less than one-third the pounds of Moly-Cop balls were required.

The economy of Moly-Cop balls in ore reduction has been borne out in reports from all over the world, wherever Moly-Cop balls are used. The harder, finer martensitic structure of Moly-Cop balls, due to the chemical composition of the special alloy and their heat treatment, assure continued spherical shape and longer grinding life. A comparative test of Moly-Cop balls in your own mills will convince you.

The name and address of the Mining Company making the test will be furnished on request.

Carbon and Alloy Steel, Ingots, Blooms, Billets, Plates, Sheets, Merchant Bars, Steel Joists, Structural Shapes, Road Guard, Reinforcing Bars

Welded Wire Mesh, Wire Products, Wire Rods, Fence, Spring Wire, Nails, Rivets, Grinding Media, Forgings, Track Spikes, Bolt and Nut Products

SHEFFIELD STEEL

CORPORATION

HOUSTON KANSAS CITY TULSA

Export Representative:
ARMCO INTERNATIONAL CORPORATION
Middletown, Ohio

SAN FRANCISCO, CALIF.—This city is continuing a program of street improvements which will involve a number of important structures in 1950, the principal one being the Broadway Tunnel extending from Powell Street to Larkin Street. This will be a twin bore tunnel, each bore carrying two lanes of traffic and a narrow sidewalk.

The program also includes two important bridge structures on main highways, the widening and repaving of several important streets, and the removal of 15 to 20 miles of abandoned street car tracks and the complete reconstruction and repaving of the old track areas.

Other municipal improvements we expect to undertake next year include a public works yard and a third and final sewage treatment plant. Two other treatment plants were started in 1948 and are now well under way.

H. C. VENSANO
Director, Department of Public Works

SEATTLE, WASH.—In 1948 the sum of approximately $3,300,000 was expended for the paving of streets, alleys and concrete walks, and the construction of bridges and viaducts. In 1949 this same category of improvements were built to the extent of an expenditure of approximately $3,500,000.

Our program of public works construction for 1950 involves an expenditure of approximately $8,300,000. This is broken up as follows: street paving, $200,000; alley paving, $600,000; concrete walk installation, $200,000; bridges and viaducts, $5,500,000.

One of the principal projects is the Alaskan Way Viaduct. This project consists of a double-deck, 6-lane structure, located along the waterfront and by-passing the main business district. It is estimated that one-half of the total cost of $8,500,000 will be expended on this project during the ensuing year.

In addition to the expenditure of the $8,300,000, we have an additional expenditure of $350,000 planned to be spent in the resurfacing of approximately 25 miles of existing pavements. This is a continuous program performed by the city's forces in which about 90,000 tons of asphaltic concrete, produced in the city's plant, are used.

J. ROBERTSON
Assistant City Engineer

WASHINGTON, D. C.—Based on a fiscal year basis, the following are the expenditures and estimated expenditures for 1948 through 1951.

1948—$13,604,000
1949—$11,636,000
1950—$10,597,000 (Estimated)
1951—$10,263,000 (Estimated)

During 1949 the Whitehurst Freeway, an elevated structure over one-half mile in length, was completed and opened to traffic. The total cost of this project was $3,487,828.

Work progressed on the 14th Street bridge over the Potomac River to a point where it is planned to open the structure around March 1, 1950. The estimated cost of this project is $6,050,000.

The construction of the Dupont Circle underpass will be approximately 90 percent complete by the end of the current year. Present plans call for this structure project to be opened about March 15, 1950. The estimated cost is $3,831,000.

The South Capitol Street bridge over the Anacostia River will be 99 percent complete at the end of the year and we plan to open the span to traffic around January 15, 1950. The total cost of this structure is approximately $5,400,000.

J. N. Robertson
Director of Highways,
District of Columbia

Gypsum Companies Take Loss In '49—Expect Improvement

Gypsum industries suffered a dip in sales and earnings in 1949, according to published reports. National Gypsum officials, notably President Melvin H. Baker, indicated that August and September sales were up "more than 30 percent" and that earnings have paralleled this improvement. The upturn was said to be due to a spurt in construction activity. The nine-month period (January to September) showed a net profit of $4,081,146 on sales of $42,835,748, whereas for the 1948 nine-month period the score stood at $5,545,548 (net profit) and $49,852,860 (sales).

U. S. Gypsum Company and subsidiaries reported a net profit of $16,100,252 for the first nine months of 1949, as against $18,667,000 in the like period of 1948. Net sales stood at $101,616,681 for the first three quarters in 1949, and at $109,575,201 in 1948. It was stated that the reduced earnings in 1949 were due to the devaluation of the Canadian dollar in September, 1949.

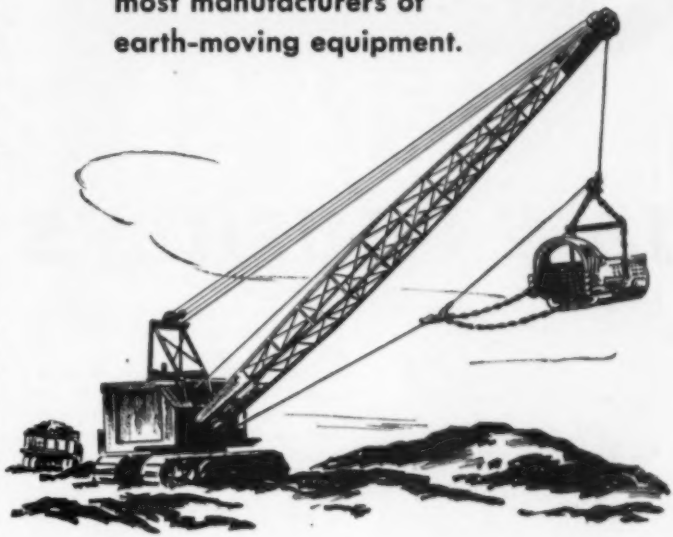
Newly-Established Plant Operated by Sulgrove Clan

At a site near Martinsburg, Mo., a $100,000 family venture is paying off handsomely. The newly-installed equipment owned by the Monroe Sulgroves—parents and sons Billy and Harold—is now in full operation after several months of preparation.

Products of the plant at present in-now in full operation.

FIRST WITH MANUFACTURERS . . .

J-M INDUSTRIAL FRICTION MATERIALS are specified as original equipment by most manufacturers of earth-moving equipment.



FIRST WITH OPERATORS . . .

Operators who want to keep maintenance costs low *know* that JOHNS-MANVILLE FRICTION MATERIALS are easy to wear in, hard to wear out.

If Johns-Manville materials are right to *start* with . . . they must be right to *stay* with. When you order replacements, remember that Johns-Manville says "stop" and "go" to more tonnage than any other friction materials . . . see your Johns-Manville Friction Materials distributor or write Johns-Manville, Box 290, New York 16, New York.

JM

Johns-Manville
INDUSTRIAL FRICTION MATERIALS
No. 1 With Leading Manufacturers

personal mention

JERRY DONOGHUE, former district sales manager for southern California for Kaiser Gypsum, is now product manager of lath and plaster. He will be succeeded in his former duties by RALPH MARKHAM.

Mr. Donoghue became associated with the Celotex Corporation in 1938 as a plastering expert. Subsequently he joined the staff of the old Standard Gypsum Company, Inc., which now operates under new direction as Kaiser Gypsum. Mr. Markham has been with Kaiser Gypsum since completing his work at Hungry Horse Dam, where he was associated with the General Construction Company.

VERNON L. MATTSON, chief engineer of the Consolidated Feldspar Corporation, Parkdale, Colo., has been named director of the Colorado School of Mines Research Foundation, Inc., by the directors of the foundation.

WILLIAM ASH, plant manager of the New England Lime Company, Canaan, Conn., was recently named program chairman for the National Lime Association.

BERNARD REATH has been promoted to general sales manager of the Indiana Limestone Company, Inc., according to an announcement released by William G. Riley, president of the company. Mr. Reath has been associated with the Indiana limestone industry since February 2, 1907, and with the Indiana Limestone Company since its inception in 1926.

C. E. Stiver

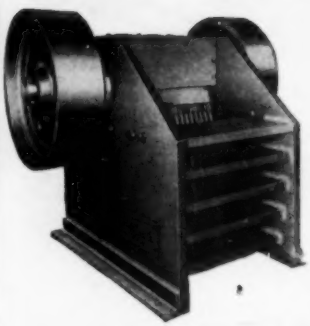
CHARLES E. STIVER recently succeeded his father, Chris E. Stiver, as sales representative for Marquette Cement Manufacturing Company in southeastern Missouri. Mr. Stiver retired in September after 25 years of distinguished service with Marquette.

In order to carry on the duties of his father, Charles Stiver left the Naval Air Arm on September 1 with the rank of lieutenant commander. He had been stationed at the Naval Air Test Center, Patuxent River, Md. He had been with the Johns-Manville Corporation before entering the Navy in 1942.

ELIOT K. BARTHOLOMEW, formerly of the Metropolitan Life Insurance Company, has succeeded RICHARD W. JONES JR. as secretary, treasurer and a director of the New York Trap Rock Corporation. Mr. Jones had been treasurer of the corporation since its organization and for many years secretary and a director.

STUART H. RALPH, vice-president and a director of the Flintkote Company, was elected president of the Insulating Siding Association at its annual meeting held recently in Chicago's Drake Hotel. Mr. Ralph succeeds Harry F. Altheide, vice-president and general manager of the Globe Roofing and Siding Products Company.

JAW CRUSHERS



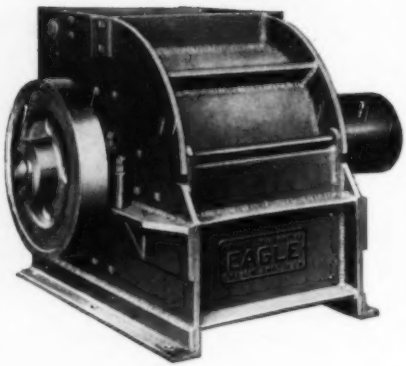
For many years Eagle jaw crushers have been performing faithfully through the nation and around the world. This modern design, large capacity primary crusher, by the originators of one-piece, electric welded crusher frames, is noted for its greater strength per pound crusher weight.

It comes equipped with plain self-oiling of SKF bearings. Reversible crusher jaws and cheek plates. Sizes range from 10" x 16" to 20" x 36" with capacities from 20 to 1,800 tons per day.

PULVERIZERS

This advanced type pulverizer does outstanding work in the field of reducing limestone for agricultural purposes. Very efficient in other types of stone reduction, too.

The one-piece welded steel frame is ¾" plate. Alloy steel shaft revolves on SKF self-aligning bearings in dust-proof housings. Sizes: 12" x 16", 12" x 24" and 36" x 42". Screen spacers from 1/16" to 2".



EAGLE
JAW CRUSHERS · IMPACT BREAKERS
PULVERIZERS · CONVEYORS · LOADERS
CRUSHER CO., Inc. GALION OHIO·U·S·A

J. G. LUTHER, former superintendent at Ideal Cement Company's Trident plant, retired from his duties in September of last year. He joined the staff in 1922 as chief electrician, and became superintendent in 1943.

ELMER T. EPKE is the new personnel and safety supervisor at the Portsmouth, N. H., plant of the National Gypsum Company. Mr. Epke was formerly on the staff of National's plant at Clarence Center, N. Y.

B. E. Gray

BERNARD E. GRAY, formerly general manager and chief engineer of the Asphalt Institute, was elected president of that body on December 7 by its board of directors. At the same time INGHRAM GRAYSON was named chairman of the executive committee.

Re-elected to succeed themselves in office were the following: HERBERT SPENCER, secretary; GEORGE R. CHRISTIE, treasurer; and JOHN N. SMITH, assistant treasurer. Early in his professional career Mr. Gray was appointed engineer-economist with the United States Bureau of Public Roads and later became senior highway engineer in charge of some of the first Federal Aid projects. He has been with the Asphalt Institute since 1930. Field studies in all of the 48 states and in foreign countries have occupied his attention during much of his time, along with lecturing and writing for the technical press.

JOHN C. BEST, vice-president of the National Gypsum Company of Buffalo, has been appointed chairman of the International Affairs Committee of the Buffalo Chamber of Commerce for the coming year.

Mr. Best was also named a member of the Committee for the International Trade Organization in recent weeks. He is a member of the Inter-American Arbitration Commission and the International Business Relations Council of the International Arbitration Association.

E. M. BARKER, plant superintendent for Calaveras Cement Company at San Andreas, Calif., has been elected president of the Calaveras County Chamber of Commerce for the coming year.

LAWRENCE H. CORNELIUS was recently appointed purchasing agent for the American Potash and Chemical Corporation, according to an announcement made by Robert B. Coons, vice-president. Mr. Cornelius has assumed his duties in the company's Los Angeles office. He succeeds the late Arvin F. Whitener.

DEISTER

Announces

New Non-Blinding

AG-LIME

SCREEN

In Operation—Booths 35 & 36—Sand and Gravel and Crushed Stone Show.

- Much Longer Stroke
- Far Higher Speed (approx. 2000 RPM)
- Graduated Length of Stroke
- Aerodynamic Construction
- Unitized Head-Motion

This new Deister Screen is designed *especially* for the faster, better handling of ag-limestone and other damp, sticky, fines.

An extremely rapid stroke-cycle has been developed by removing unnecessary dead weight. Light but strong materials and aircraft construction principles are used in both head-motion and supporting members.

The *new* Unitized Head-Motion is precision-built and jig-assembled . . . is demountable as a unit and interchangeable so that there is never any need for downtime when screens are operated in batteries.

You'll want all the facts on this new Deister Screen for faster, more profitable handling of damp, sticky materials. Write for Bulletin No. 51 — today.

This cut-away shows the new Unitized Head-Motion of the Deister Ag-Lime Screen.

DEISTER SCREENS

DEISTER MACHINE COMPANY

FORT WAYNE 4, INDIANA

Obituaries

HARRY D. JUMPER, 54, mayor of Azusa, Calif., and chief engineer of the Consolidated Rock Products Company of that city, died of a cerebral hemorrhage in a local hospital on December 19.

Mr. Jumper had been an engineer with Consolidated for the last 27 years. He had served continuously on the Azusa city council since 1940 except for a brief period during World War II, when he was in the U. S. Army Engineers Corps. Officials of Consolidated Rock Products have started a memorial fund which will be used to improve the city's memorial park, one of Mr. Jumper's achievements during his mayoral administration.

WILLIAM SUMNER BARTON, 71, who until his retirement four years ago was general traffic manager of the Ash Grove Lime & Portland Cement Company at Kansas City, Mo., died at his home in that city on November 5.

JAMES A. GISH, operations manager of the Carolina Portland Cement Company at Harleyville, S. C., died on November 10 of injuries received in a motor accident. Mr. Gish joined the Carolina Portland Cement staff last May. He had previously been associated with the Lehigh Portland Cement Company as manager of the Easton, Pa., plant.

WARREN SILL STEELE, former sales manager of the Kelley Island Lime & Transport Company and the Medusa Portland Cement Company, both of Cleveland, Ohio, died on October 16 at a Rochester, N. Y., hospital. In recent years he had been associated with the Navy Ordnance Department of Camera Works in Rochester. He was 53 years of age.

H. H. HOLLOWAY of Baton Rouge, La., 60-year-old owner of the Holloway Sand and Gravel Company, the Rapides Sand and Gravel Company, the Holloway Company and the Monroe Sand and Gravel Company, died suddenly while in Morgan City, La., on October 19, 1949.

C. L. CHAPPELL, superintendent of the R. E. Janes Gravel Company, Inc., Austin, Tex., was one of the victims of the DC-6 air crash in Dallas in December.

J. E. DODSON, 52, general manager of the Oolite Rock Co., vice-president of the Miami Crushed Stone Co., president of the Material Sales Corp., and secretary-treasurer of the Peninsular Materials Corp., died recently at Coral Gables, Fla.

DONALD N. FAWCETT, director of purchases for The Flintkote Company, East Rutherford, N. J., died in Chicago on December 2. He was 46 years of age.

Willard L. Chrisler, Kenmore, N. Y., has been granted a patent for an acoustical plaster which is guaranteed to hold for years to the walls to which it is applied. Rights to the patent have been passed to the National Gypsum Company.

Pontiac, Mich., has a new industry, the processing plant of the Wilkinson Sand and Gravel Company at 2280 Auburn Road. Capacity of the plant is from 400 to 500 cu. yds. of gravel per day, recovered by dragline and shovel. D. H. Wilkinson is the owner.

EASY MANEUVERABILITY—RUGGED DEPENDABILITY

MM MINNEAPOLIS-MOLINE MODERN MACHINERY

INDUSTRIAL WHEELERS

Get More Work Done Per Hour.....

When you want to speed the job—do it with MM Industrial Wheellers. Operators of ready-mix concrete plants report loading 70-80 tons of gravel per hour with MM Industrial Wheelers on average hauls of 100 feet from stockpile to hopper.

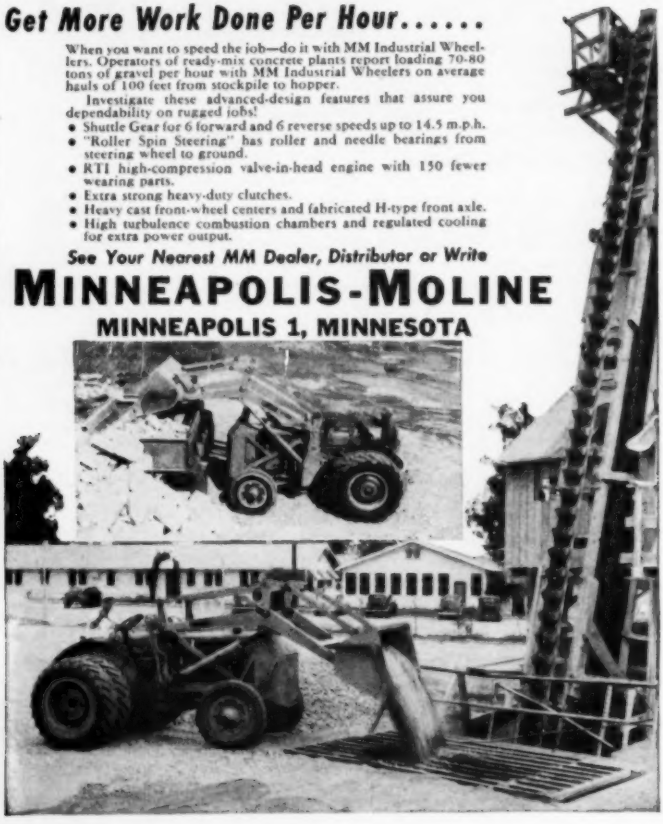
Investigate these advanced-design features that assure you dependability on rugged jobs!

- Shuttle Gear for 6 forward and 6 reverse speeds up to 14.5 m.p.h.
- "Roller Spin Steering" has roller and needle bearings from steering wheel to ground.
- RTI high-compression valve-in-head engine with 150 fewer wearing parts.
- Extra strong heavy-duty clutches.
- Heavy cast front-wheel centers and fabricated H-type front axle.
- High turbulence combustion chambers and regulated cooling for extra power output.

See Your Nearest MM Dealer, Distributor or Write

MINNEAPOLIS-MOLINE

MINNEAPOLIS 1, MINNESOTA



trade notes

First deliveries from the plant of the newly-organized Baer Steel Products, Inc., at Auburn, Wash., cover a wide range of buckets, sizes, and special purpose shapes. All of Baer's grade buckets, as well as the new line of replaceable teeth, are cast in Fibraloy, "the toughest steel known," which was developed by Dr. Alexander Finlayson, Pacific Car & Foundry metallurgist.

The new Baer plant at Auburn houses a complete pattern shop, steel fabricating shop and engineering department. Steel castings are poured at Pacific Car & Foundry's Renton foundry 12 miles away. The company is accepting orders for replaceable teeth for all makes of buckets and soliciting new inquiries for buckets of any size.

J. P. Heil

Julius P. Heil, Wisconsin's governor from 1939 to 1942, and founder of the Heil Company of Milwaukee, died on December 1 while on a pheasant hunting trip. The 73-year-old industrialist suffered a heart attack and died before he could be taken to a hospital.

Mr. Heil, who came to Wisconsin from Germany at the age of 2 years in 1876, founded his business as a small machine shop after having worked as a blacksmith and a machinist. His original capital was $500. Out of this small venture grew his Milwaukee business, which now employs 2,000 men engaged in turning out trucks, hydraulic hoists, bulldozers, scrapers, dump bodies and wagons, etc. In 1946 Mr. Heil retired as president of his company, to become president of the board of directors. His son, Joseph Heil, succeeded him as president.

A solution to New York's traffic congestion was offered by Harold Von Thaden, vice-president of Hewitt-Robins Inc., before the 70th annual meeting of the American Society of Mechanical Engineers on December 1 at the Hotel Statler, when he suggested mechanical belt conveyors below the city's streets to handle both people and cargo.

To handle cargo in this manner, Mr. Von Thaden said, would rid the city of at least 25 percent of the truck traffic that congests the mid-town area.

Full operation is reported at the St. Marys Kraft Corporation's pulp and paper mill and the Kraft Bag Corporation's new conversion plant at St. Marys, Ga. At the latter plant heavy-duty, multi-wall shipping sacks are produced for plaster, cement, gypsum, lime, sand, gravel, clay, talc and many types of crushed stone products. The mill converts slash pine into pulp and turns out Kraft paper for shipping sacks, wrapping and other paper products. The two concerns are subsidiaries of the Gilman Paper Company.

The Lima Shovel and Crane Division of Lima-Hamilton Corporation, Lima, O., has announced the appointment of Tulsa Equipment Company, Inc., 418 East 2nd Street, Tulsa 3, Okla., as sales agent in Oklahoma, with the exception of six eastern counties—Adair, Sequoyah, Haskell, Leflore, Latimer and McCurtain.

ELIMINATE "BOTTLENECKS"

in weighing, handling and processing bulk materials.

Wherever bulk materials are handled on belt conveyors, MERRICK Scales help to keep production lines open by providing precise and instant knowledge of material weights, at every processing stage.

Modern Plants Use
MERRICK
WEIGHING MACHINES

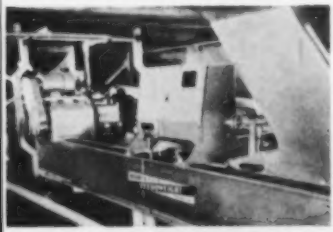
MERRICK Scales are fast, accurate, automatic machines—easily installed, durable, and very economical to operate.

They promote high industrial output, and are a significant factor in assuring product uniformity.

ESTABLISHED
FOR OVER 35 YEARS

Write for Bulletin

. . . FEEDOWEIGHT is a combined conveyor type feeder and scale that weighs, controls, and records the amount of material fed. Correctly proportions two or more materials.



. . . WEIGHTOMETER supplies a continuous weight record of materials in transit. Applicable to any size belt conveyor, inclined or horizontal.

MERRICK SCALE MFG. CO.
180 AUTUMN STREET • PASSAIC, NEW JERSEY

LOWER YOUR YARDAGE COSTS WITH YUBA BUCKET PINS

Comparative Tests by Users Prove Them Long-Wearing, thus More Productive

YUBA pioneered alloy steel bucket pins in 1912, buying heat lots of billets ever since then and has constantly improved wearing qualities for longer life and lower operating costs.

Comparative on-the-job tests by users have demonstrated consistently that YUBA pins outlast competitive pins in the same bucket line. Here are some of the reasons why users prefer YUBA bucket pins:

1. YUBA pins are forged and machined of carefully selected alloy steel, made for YUBA in full heat lots.
2. Each pin carries a serial number, so YUBA can follow the manufacturing and operating records of each pin from billet, until it is worn out in use. Comparing these records enables YUBA to improve manufacturing and heat treating methods, which insures you longer pin life.
3. Every pin is guaranteed for 90 days after being placed in service; any pin breaking during that time is replaced at no charge.

SPECIAL EQUIPMENT BUILT TO ORDER

●

Complete steel fabricating, forging, and machine shops at your service. Send us your blue prints or specifications for prices.

YUBA'S many years' experience with careful shop work, modern controlled heat treating and rigid inspection, yield bucket pins of highest quality. Try them—prove for yourself that YUBA bucket pins reduce your yardage costs.

ALL SIZES FOR ALL BUCKET LINES

YUBA makes bucket pins of all sizes—from the smallest to the largest diameters—to fit any make of bucket and with either straight or special lugs as specified by you. Order for your requirements NOW.

YUBA MANUFACTURING CO.

Room 718, 351 California St., San Francisco 4, California, U. S. A.

AGENTS { SIME, DARBY & CO., LTD. · SINGAPORE, KUALA LUMPUR, PENANG.
SHAW DARBY & CO., LTD., 14 & 19 LEADENHALL ST., LONDON, E. C. 3.

CABLES: YUBAMAN, SAN FRANCISCO · SHAWDARBCO, LONDON

R. W. Walker

R. W. Walker, Mack - International Motor Truck Corporation vice-president, has been named manager of the company's newly created Eastern Division, a territory representing the consolidation of three of the company's major East Coast sales divisions. In his new post Mr. Walker will direct all Mack truck, bus and fire apparatus sales and service activities through the 17 direct factory branches maintained throughout New York state and northern New Jersey.

Mr. Walker has been with Mack for a quarter of a century. For the last four years he has been in charge of the company's Metropolitan New York Division, with offices at the Mack Long Island City plant, where he will continue to make his headquarters.

Appointment of Albert G. Crockett as manager of distributor sales for Mack-International Motor Truck Corporation has been announced. In his new position Mr. Crockett will head Mack's entire domestic and Canadian wholesale organization of some 500 distributors. Mr. Crockett's headquarters will remain in Mack's general offices, Empire State Building, New York City.

Austin Goodyear has been appointed assistant to B. T. Moffatt, vice-president in charge of sales for Hewitt-Robins Inc.

Other appointments in the Hewitt-Robins sales organization include C. A. Thompson, Charleston district sales manager, and C. W. Brooks, formerly representing the company in northeastern Pennsylvania, who has been transferred to the corporation's Virginia-North Carolina sales territory.

The Clyde Iron Works, Inc., Duluth, Minn., announces the appointment of Harry E. Greenwood as factory representative for the northern half of the Midwest territory. His headquarters will be at the Clyde office, 224 South Michigan Ave., Chicago, Ill.

Mr. Greenwood has been with the Clyde Iron Works, Inc., for several years, and prior to entering the Engineering Corps of the Army was employed as field engineer. Since returning from army service, he has been employed in various capacities at the Duluth plant.

William H. Kilkenny, well known West Coast materials-handling engineer, is the new general manager of the Hyster Company's southern California retail store at Huntington Park. During World War II Mr. Kilkenny, as a lieutenant commander, specialized for four years in naval materials-handling programs, and he has since been engaged as a materials-handling field consultant and in sales administrative work for the Hyster Company.

Three new industrial truck distributorships to handle sale and service of fork lift trucks, straddle trucks, mobile cranes, and their attachments, have been announced for the Hyster Company, whose factories are located in Portland, Ore., and Peoria and Danville, Ill.

A. & W. Engineering Co. of 2222 N. W. 14th Street, Miami, Fla., will cover 17 counties in the southern part of Florida.

Wrenn Brothers of 220 South College Street, Charlotte 2, N. C., will cover a territory comprising all of South Carolina, the southern part of North Carolina, and most of Georgia.

King and Kringel Machinery Corporation of 2390 S. Delaware, Denver 10, Colo., will serve all of Colorado, most of Wyoming, and the western part of Nebraska.

Newton R. Crum is the new representative for Flexible Steel Lacing Co. of Chicago, Ill., in California. This company manufactures Alligator and Flexco belt fasteners for conveyor and transmission belts.

Harry Huger Houston II, former vice-president of the Brooks Manufacturing Company, Knoxville, Tenn., has joined the staff of Armour Research Foundation of Illinois Institute of Technology. Mr. Houston will work on research projects in the department of ceramics and minerals of the foundation.

Since his association with the Brooks Co. Mr. Houston has directed development work on materials-handling equipment. He instigated the development of unique hydraulic machinery for handling sugar cane in Cuba and has planned and installed rock crushing plants, including crushers, conveyors, and storage bins.

Food Machinery and Chemical Corporation announced the appointment of Gerald F. Twist as manager of the firm's Peerless Pump Division, with headquarters at Los Angeles. Mr. Twist has taken over the duties of Francis F. Fairman Jr., who is resuming his former association with the General Electric Company.

G. Greer Coolidge, senior vice-president of Harbison-Walker Refractories Company, has been elected a director of Blaw-Knox Company. Mr. Coolidge has been associated with Harbison-Walker since 1907 and has been a director and vice-president of this firm since 1933.

Mr. Coolidge will fill the vacancy on the Blaw-Knox board occasioned by the death of the late Donald C. Bakewell.

The appointment of S. K. Bradley as assistant director of Multiwall Bag sales for Union Bag & Paper Corporation, has been announced. At the same time it was announced that J. J. Patterson, former Multiwall sales representative, succeeds Mr. Bradley as Eastern District sales manager for Multiwall Bag sales.

The Dorr Company has acquired the rights to the metallurgical jigs and sewage aerators of the Pan-American Engineering Company, which is now in process of liquidation. The design, production and marketing of this former Pan-American equipment has been taken over by The Dorr Company. W. G. Moore, formerly design engineer for the Pan-American Engineering Company, has become a member of The Dorr Company's staff and will soon take up his new duties as a member of the company's engineering department in New York.

Independent Pneumatic Tool Company, of Aurora, Ill., manufacturer of Thor portable power tools, has announced the following appointments:

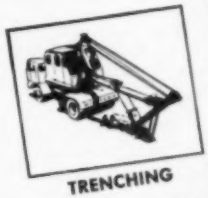
Eugene C. O'Connell, formerly service engineer in the Los Angeles branch, is the new manager at San Francisco. Clarence H. Gabriel, formerly service engineer in the company's Salt Lake branch, is the new manager at Denver.

Appointment of the Colorado Builders' Supply Company of Casper, Wyo., as distributors of General Motors Series 71 industrial and oil field diesel engines has been announced by V. C. Genn, general sales manager of the Detroit Diesel Engine Division. The territory Colorado Builders' Supply Company will cover includes all of Wyoming except Teton, Lincoln and Uinta counties.

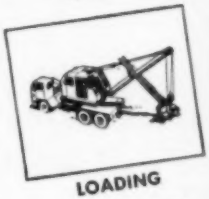
Colorado Builders' Supply Company is equipped to handle all G. M. diesel service and parts work. In addition to their present building, a warehouse is now under construction.

MICHIGAN

TRUCK CRANES with Remote Control



TRENCHING



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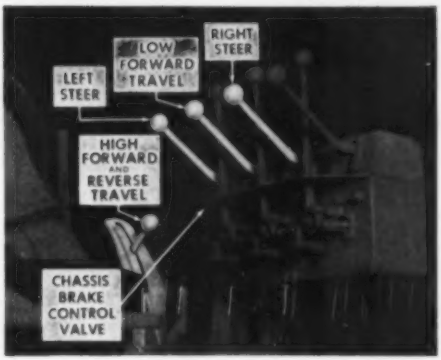

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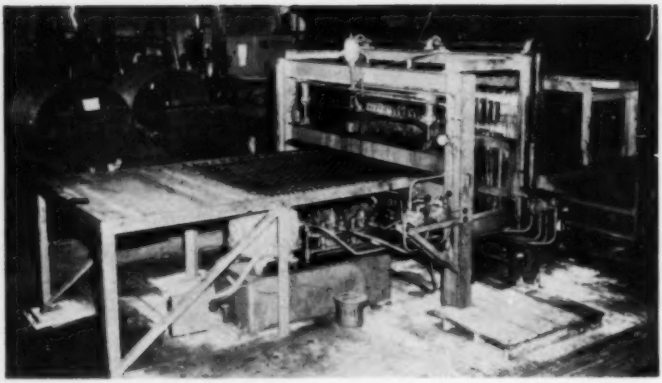

• The new Corb-Pettitt screen loom.

Korb-Pettit Wire Fabrics & Iron Works Inc., Philadelphia, Pa., has developed a new hydraulic loom for use in the production of heavy screens. The new device is said to produce a woven screen product which is absolutely uniform. Formerly these heavy-duty screens were produced by processes which involved laborious hand operations.

Completion of an entirely new factory at Jackson, Mich., was announced by George Spatta, president of Clark Equipment Company, manufacturers of materials-handling, automotive, and street railway transportation equipment. The new plant, which represents the major undertaking in the company's overall expansion program, will bring the production of Clark's familiar line of transmissions, farm tractor drives, gears and forgings under one roof. The company also operates plants at Buchanan, Battle Creek and Berrien Springs, Mich.

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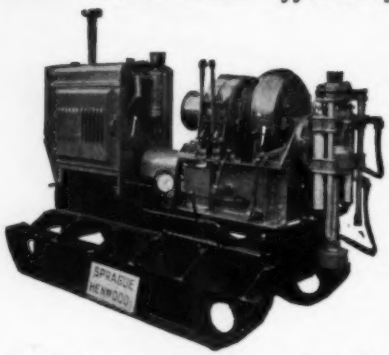

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legal decisions

By LEO T. PARKER
Attorney at Law
Cincinnati, Ohio

A few days ago a reader wrote an interesting letter, as follows: "I operated a sand and gravel business for many years, and then organized a corporation to take over the business. The corporation's directors placed a high book value on the property, assets, etc., which I transferred to the corporation. In fact, the corporation's book value is more than twice my value before the corporation was organized. Now the tax commission claims I am deficient on my tax payments and is suing me for a large amount plus, interest, penalties, etc. Can I win this suit?"

The answer is, yes. The reader can win this suit. This is so because only recently a higher court rendered a decision holding that the difference in mere book values is not taxable profit.

For example, in *Commissioner of Corporations and Taxation v. Newton*, 86 N. E. (2d) 524, reported August, 1949, the testimony showed facts, as follows: Two men named Newton and Washburn had conducted a sand and gravel business as partners for a number of years; then the firm was dissolved. They organized a corporation to succeed the partnership. The book value of the partnership assets and personal property amounted to $121,399, but upon the conveyance of the assets to the corporation these assets were carried upon the books of the corporation as $375,000.

The tax commissioner determined that the taxpayers had a "gain" taxable as income because the corporation's book value of assets was nearly three times of the book value of assets claimed by the partnership. In other words, the tax commissioner ordered Newton and Washburn to pay taxes on the difference between $375,000 and $121,399. They appealed to the higher court, which re-

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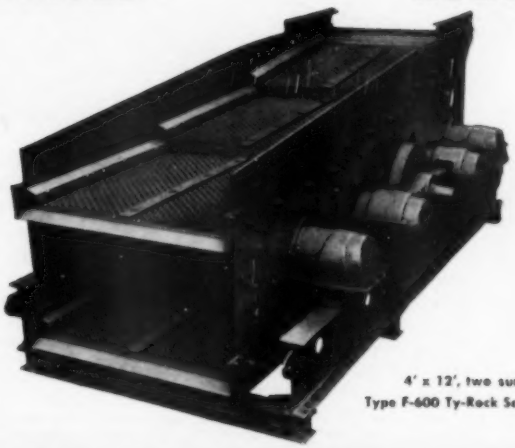

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versed the commission's decision, and said:

"At the time of incorporation these assets, which had a book value of $121,399, were more than trebled in value in setting them up on the corporate books. This was a mere bookkeeping device which apparently resulted in the imposition of the taxes in question. The record does not show the purpose of increasing this valuation. There is nothing to show that the increased valuation was the fair market value of the assets. They were worth no more a minute after they were transferred to the corporation than they were a minute before. If we assume that somehow this increase was actual and real, it does not follow that a resulting gain was received by the taxpayers."

This decision was rendered notwithstanding the tax commission argued that the joint contribution by Newton and Washburn of their property in the new corporation resulted in a stronger economic and commercial position than the partnership had in the sand and gravel business. In this respect the court said:

"The advantages which might thereby be secured by the corporation cannot be considered as individual income where the shares at the time of their issue, when given in exchange for partnership assets and tangible personal property, had no value readily realizable in the market and where the stockholder has not converted his shares into cash or its equivalent but still retains them."

For comparison, see *Bryant v. Commissioner*, 291 Mass. 498; *Sears v. Commissioner of Taxation*, 78 N. E. (2d) 89; and *Commissioner of Taxation v. Fopi*, 85 N. E. (2d) 776. These courts clearly indicate and hold that if either an individual or partnership organizes a corporation and *sells* all or *any* stock at a greater price than the listed book value of the assets at the time the corporation was organized, taxes must be paid on the profit which is the difference between the cash received for the stock and its listed book value before the corporation was organized.

Scope of Employment ....

Modern higher courts consistently hold that an employee injured "outside the scope of his employment" cannot receive compensation for the injury. Therefore, considerable discussion has arisen from time to time over the legal question as to when an employee actually is injured within the scope of his employment and is entitled to an award of compensation.

According to a recent higher court an employee is within the scope of his employment when doing anything for his employer's benefit or interest. However, the employee is outside the scope of the employment when performing an act solely for his own benefit.

For illustration, in *Stuhr v. State Industrial Accident Commission*, 208 Pac. (2d) 450, the testimony showed facts, as follows: One Stuhr was employed by one Lane as a truck driver in hauling

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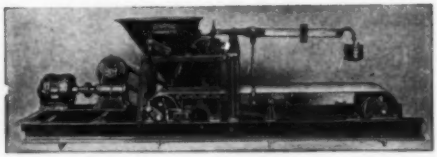

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gravel. His agreed compensation was ten cents per cubic yard mile. Stuhr furnished his own truck and paid the expense of operating and maintaining it. One morning during working hours a piece of steel struck his right eye, producing an injury which resulted in his total and permanent blindness. The injury was sustained while he was repairing a spring on his truck. Stuhr sued Lane for compensation under the State Workmen's Compensation Act. The higher court refused to award compensation, and said:

"Plaintiff (Stuhr) was employed to haul gravel, not to do the work of a mechanic. Unless such extraneous work was directed by or acquiesced in by his employer, it would seem that it should not be considered as having arisen out of or in the course of his employment. . . The accident occurred during his usual working hours, but not at a place where he was expected to be."

This court indicated that if Stuhr had been working for Lane on a salary and the truck was owned by Lane, Stuhr would have been entitled to compensation because when repairing the spring of the truck he would have been performing work *for the benefit* and interest of Lane, the employer. However, since Stuhr owned the truck, his act of fixing its spring was solely for his own benefit.

Also, see *McDonald v. Denison*, 185 P. (2d) 508, 510. Here an employee was hired to haul sand and gravel for a compensation of eight cents per cubic yard mile, out of which he was required to keep his truck in repair and pay for his gas and oil. He was injured while repairing his truck in a repair shop 22 miles from his place of work, with which shop his employer had no connection.

The higher court held that the injury did not "arise out of and in the course of his employment," and was not compensable.

For comparison, see *Smith v. Reich Bros.*, 203 La. 928. In that case one Smith was employed in hauling road-surfacing material, furnishing his own truck, which was driven alternately by himself and by a helper. He was standing on the highway in front of his rented living quarters, awaiting the arrival of his helper, with the truck, in order that he might take over and relieve the helper. While so waiting, he was struck by another truck and injured.

In subsequent litigation the higher court held that there was a causal connection between Smith's employment and his presence at the place where he was injured, and that the injury arose out of and in the course of his employment. Hence Smith was awarded compensation under the State Workmen's Compensation Act.

Also, see *March v. State Industrial*, 142 Or. 246; *Freedman v. Shottenfeld*, 9 N. Y. S. (2d) 88; and *McKay v. Crowell Company*, La. App., 189 So. 508. These courts held that an employee who works on a salary is within the scope of his employment when the injury occurred while the employee was eating his lunch upon his employer's

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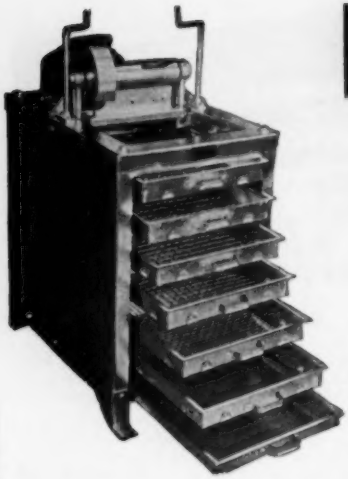

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premises, or sleeping thereon, or taking a shower bath thereon. These cases were decided in favor of the employee upon the theory that the employee, at the time of sustaining the injury, was doing something which, though primarily for his benefit, was ultimately for his employer's interest.

Employee's Release Void

According to a recent higher court it makes no difference whether an injured employee signs a "release." He can recover *additional* compensation if later he proves that the injury is more severe than he believed.

For illustration, in *Mondillo v. Ward*, 57 Atl. (2d) 447, it was shown that a truck driver sustained an injury by having his right foot, ankle, and lower leg run over as he was alighting from his truck.

The employer paid the employee compensation under the State Workmen's Compensation Act and a compensation *final settlement* receipt was signed by the employee.

Six years later the employee sued for additional compensation and proved that the injury was aggravated to a point where he could not attend to his regular duties. The higher court allowed additional compensation based on testimony of the *present* disability.

Rains Delay Contractor

According to a recent higher court a contractor who fails to complete a building according to plans and specifications cannot expect to avoid paying the property owner damages on an excuse that heavy and unusual rains delayed or interfered with the construction work.

For example, in *Costanza v. Cannata*, 36 So. (2d) 627, it was shown that a cement contractor signed a contract to construct a concrete block commercial building in accordance with the plans and specifications. The contract specified that the building was to be erected "in a perfect and thoroughly workmanlike manner."

The contractor did not complete the building exactly according to the plans and specifications on account of unusually heavy rains. The higher court awarded the owner damages of $9,800 plus the sum of $250 for the owner's attorney fees.

Union Liable in Damages

According to a recent higher court a union may be held liable in damage where its members illegally picket a plant.

For example, in *International, 212 S. W.* (2d) 1000, a plant owner sued a union and alleged that the union illegally picketed his plant, with the result of loss of profits and shrinkage in value of its property.

The higher court awarded the employer $500 damages saying:

"Appellee's (employer's) business here was shown to have been a going concern and making profits at the time when the 'picketing' by appellants (union) was visited upon it, causing the loss and damages the trial court allowed the comparatively small recovery for."

Court Refuses to Anticipate

Recently a reader wrote as follows: "A few months ago our company purchased a farm intending to quarry rock. It so happens that the farm adjoins an expensive estate whose owner sued us to get an injunction to prevent us from quarrying rock on our farm. The owner of this estate claims in his suit that noises and vibrations will affect 'injuriously his health and comfort to an unreasonable degree'. Please assist our lawyer to win this suit by giving us some recent decisions in our favor".

First, it is important to explain that a court will grant injunctive relief to restrain quarrying operations apprehended to create and result in a nuisance. In such cases the burden of proof is upon the complaining party. In other words, he must prove *conclusively* to the court that *intended* operations of the quarry will be a legal nuisance and injurious to his health and interfere *unreasonably* with his comfort and normal enjoyment of his home, otherwise the court will *not* grant the injunction.

For example, in *Lou Menges Organization, Inc., v. North Jersey Quarry Company*, 67 Atl. (2d) 358, reported September, 1949, the testimony showed facts, as follows: The North Jersey Quarry Company started quarrying rock from its tract of land in 1895. The operations continued regularly until 1936, when primary blasting was discontinued; and in 1942 the activities at the site were further diminished. At this time the quarry company purchased another tract of land in contemplation of operations of the quarry including the blasting and crushing of stone. Nearby property owners filed suit and asked the court to grant an injunction to prevent the quarry company from beginning operations on its new tract of land. These property owners contended and testified that they and "their families, guests and servants will be subjected to excessive noises, vibrations, dust and noxious odors; be deprived of peace, quiet and enjoyment; suffer discomfort and impairment of health; be exposed to the hazards of falling stone and rock; and be denied the full use of their lands and the adjoining public roads during blasting operations".

The higher court refused to grant the injunction and said:

"It is to be admitted that the conduct of a stone quarry is not *per se* an unlawful enterprise. Its offensiveness to others depends upon the characteristics of its operations . . . Noises which the court normally enjoins for the protection of persons are those which affect injuriously the health or comfort of ordinary people in the vicinity to an *unreasonable* degree".

With respect to the vibrations, the court said:

"In the absence of extraordinary circumstances, this court does not ordinarily restrain vibrations unless they are sufficiently severe in force to cause or in reasonable probability likely to cause discomfort to an unreasonable extent, or some material physical damage to property".

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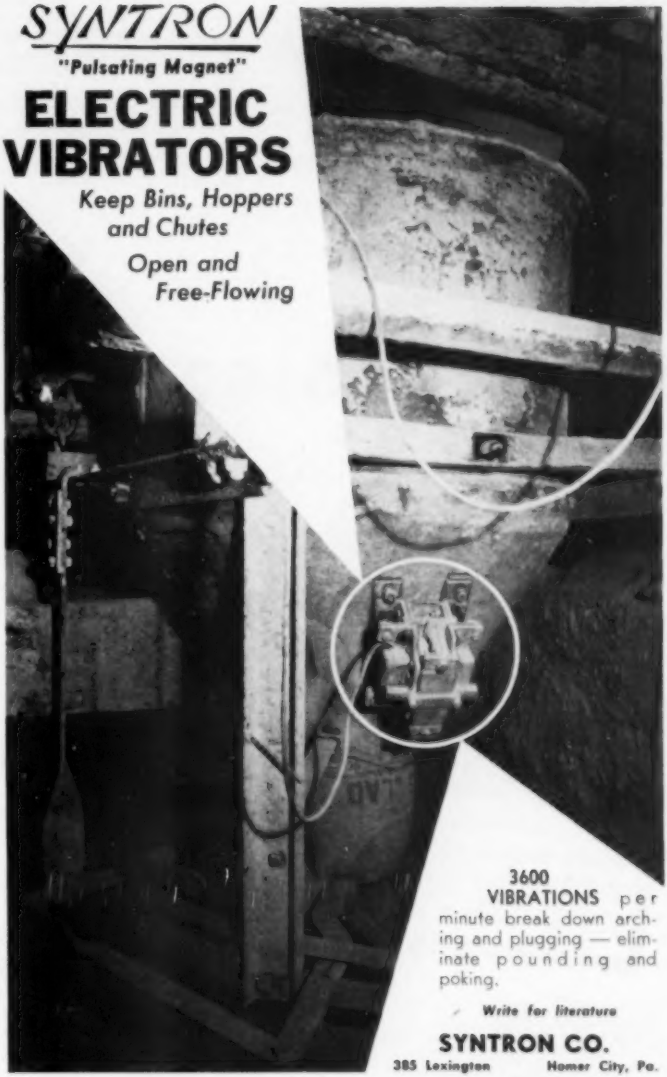

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Residential Area

According to a recent higher court a new business will not be permitted to operate in an already established residential district or area.

For example, in *Adams v. Snouffer Quarry*, 87 N. E. (2d) 484, the testimony showed facts, as follows: The Snouffer Quarry purchased a farm. The surface of the land was first stripped and blasting and removal of rock has been conducted so that the quarry is now about 27 feet deep. Operations were begun about July 1, 1947.

The Snouffer Quarry proposed to increase the output which will require more machinery of the same kind as now on the ground.

Several owners of property filed suit and asked the court to grant an injunction against further operation of the quarry. The testimony showed that only one big primary crusher producing rock from 4 inches down was on the site. Preparations for blasting are made by the drilling of holes approximately 6 inches in diameter to the depth of approximately 27 feet. The first of 12 holes discharged 1450 pounds of dynamite, the second of 16 holes discharged 2100 pounds, the third of 17 holes discharged 2500 pounds, the fourth of 10 holes discharged 1350 pounds, the fifth of 10 holes discharged 1250 pounds, the sixth of 19 holes discharged 950 pounds, and the seventh of 18 holes discharged 3450 pounds of dynamite. The quarry was in operation every week day from about 6:30 in the morning until 5:00 o'clock in the afternoon. The nearest residence to the quarry is 610 feet. Other residents are at varying distances. The testimony showed that the blasts of the dynmite caused marked concussion in several of the residences, causing windows to rattle, shaking mirrors and pictures on the walls, causing plaster to crack and fall from the ceiling and felt personally in some of the homes. The counsel for the quarry company contended that an injunction should not be issued against them because the section involved is not residential but open country. They point to the fact that the residences are widely separated; that some are of little value; that the terrain in the vicinity of the properties involved is rough and rocky. In issuing an injunction which prohibits the Snouffer Quarry from operating the quarry, the court said:

"It is true that the district in which plaintiffs' homes are located is not closely built up, but the parcels of land in which they live have been and are used exclusively for residential purposes . . . The uncertainty as to the time when the blasting might be expected added to the uneasiness and distress which followed the actual discharges. The moving and grinding of trucks in low gear up a 10 percent grade, the continuous drilling of holes in the rock when blasting was to be done, the detonation of the dynamite and the crushing of the stone is noisome and disturbing".

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traffic news

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(Rates shown include ExParte 162-B, 166-C and 168-A increases unless otherwise shown. Rates in cents per 100 lbs.)

Docket 87271 (1)—Proposed to establish on sand (all kinds) and gravel, carload minimum weight 90 percent of marked capacity of car, except that when car is loaded to full visible capacity, actual weight will apply, from Glass Rock, O., to Bellville, O., 165 cents net ton in open-top cars; 190 cents in box cars.

Docket 87272 (2)—Sand (all kinds) and gravel, in open-top cars, carload minimum weight 90 percent of marked capacity of car, except that when car is loaded to cubical or visible capacity, actual weight will apply from Botzum, O., to Bucyrus, O., 172 cents net ton. (Includes ExParte 162 and 166 increases but subject to ExParte 168 increase.)

Docket 87273 (1)—Proposed to establish a rate of 75 cents per net ton on sand and gravel, carload minimum weight 90 percent of marked capacity of car, from Terre Haute, Ind., to Jasonville, Ind.

Docket 87275 (2)—Establish on limestone, agricultural, unburned, in open-top cars, carload minimum weight 90 percent of marked capacity of car, except that when car is loaded to full cubical or visible capacity, actual weight will apply from Marble Cliff, O., to Grafton, O., 189 cents net ton.

Docket 87282 (1)—Limestone, ground or pulverized, unburned, carload minimum weight 60,000 lbs., (a) from Marlo, Mosher and Ste. Genevieve, Mo., to Sodus, Mich., 337 cents in open cars, 382 cents in closed cars;* (b) from Valmeyer and Prairie du Rocher, Ill., to Benton Harbor and Niles, Mich., 408 cents net ton.

*Includes ExParte 162-B and 166-C increases but subject to ExParte 168-A increases.

ILLINOIS FREIGHT ASSOCIATION DOCKET

Docket IRC 511-902—Crushed stone, carloads from Buncombe, Ill., to the following points:

To	Rates in Cents per Ton (2000 lbs.) Present	Proposed
Bonnie, Ina, and Whittington, Ill.	113	108
Carter, Kell, and Texico, Ill.	123	113
Salem, Ill.	123	120

Above rates include ExParte 162-166 increases of 15 cents per ton, plus 10 percent. Minimum weight 90 percent of marked capacity of car, except that when car is loaded to full cubical or visible capacity, actual weight will apply.

Docket IRC 511-904—Agricultural limestone, carloads, from McCook, Ill., to Van Orin and Kasbeer, Ill., minimum weight 90 percent of marked capacity of car, except that when car is loaded to full visible capacity, actual weight will apply (as provided in Item 10 of C.B.&Q. G.F.O. 7695-N).

RATES IN CENTS PER TON	Basic	Proposed X-162	X-166
Van Orin	97	112	123
Kasbeer	111	126	139
Present			
Van Orin (1)	97	112 (2)	123
Kasbeer (1)	111	126 (2)	139

(1) Distance rate, subject to a minimum rate of 90 cents, based 96 miles to Van Orin and 104 miles to Kasbeer. (2) Subject to a minimum rate of $1.50.

ILLINOIS FREIGHT ASSOCIATION DOCKET

Docket IRC 511-905—Stone, ground or pulverized, crushed or rough quarried, also strippings of stone quarries, in straight or mixed carload, in open-top cars, minimum weight 90 percent of the marked capacity of car, except that when cars are loaded to full cubical or visible capacity, actual weight will apply, from Krause, Ill., to Shelbyville, Altamont, St. Elmo, Salem and Benton, Ill. Present —$1.22 per ton of 2000 lbs., subject to X-162-166 increases, except $1.11 to Ben-

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UNIVERSAL VIBRATING SCREEN CO.
RACINE - - WISCONSIN

ton, Ill. Proposed—Establish the following rates in cents per ton of 2000 lbs., subject to X-162-166 increases and to be published as a terminal rate and not to apply at intermediate points: to Shelbyville, 110; Altamont, St. Elmo, Salem 108, Benton, Ill., 116.

SOUTHWESTERN FREIGHT BUREAU DOCKET

Docket 50265—Proposed to establish a rate of $2.18 per net ton on crushed stone, rubble stone and chats from Iron Mountain, Mo., to Memphis, Tenn. Not subject to X-162-166 or 168 increases.

Docket 50413 (I) Establish a rate of $3.01 per net ton on crushed stone and rip rap from Iron Mountain, Mo., to Chicago, Ill. (not subject to X-162-166-168 increases).

FREIGHT TRAFFIC COMMITTEE TRUNK LINE TERRITORY RAILROADS

Trunk Line Territory Railroads

Trunk Line M-544—(Carriers) Sand (except sand, molding, bonded, naturally or otherwise, and except ground or pulverized sand), in open-top equipment, without tarpaulin or other protective covering, carload minimum weight 90 percent of marked capacity of car, etc., from Toland, Pa., to York, Pa., $1.50 per net ton, including ExParte 162-B, 166-C and 168-A increases. Reason: to meet competition of other modes of transportation.

Trunk Line 352—Crushed stone, uncoated, carload minimum weight 90 percent of marked capacity of car, from Great Notch, N. J., to Potomac Yard, Va., $2.79 per net ton, including ExParte 162-B, 166-C and 168-A increases, applicable only on shipments destined beyond, in lieu of present sixth class rate. Reason: on same basis as rates applying from and to other points.

WESTERN TRUNK LINE NEW APPLICATIONS

Docket E-41-1147—Stone, crushed or ground, from Marblehead and Quincy, Ill., Hannibal, and Green Bay, Wis., White Bear, Mo., to Minneapolis, Minnesota Transfer and St. Paul, Minn. Minimum weight, present, marked capacity of car except that when car is loaded to full visible capacity actual weight, but not less than 50,000 lbs., will apply. Minimum weight, proposed, add the following provision:

"When a shipper orders a car of not less than 60,000 lbs. marked capacity and the carrier is unable to furnish car of capacity ordered by shipper and for its own convenience furnishes a car of greater capacity than the one ordered, the car so furnished will be used on basis of minimum carload weight of the car ordered. In no case will orders be accepted for cars of less than 60,000 lbs. marked capacity.

Docket D-25-244 (Shipper)—Proposed to establish on lime, common (namely lump, crushed, pulverized or hydrated), in straight or mixed carloads, minimum weight 50,000 lbs. from Mankato, Minn., to Chicago, Ill., 29 cents per 100 lbs. Not subject to X-162, X-166 and X-168.

"Cape Ann" FORGED

Steel Drop Ball

A Forged Steel Drop Ball of Rugged Design Engineered for Economical Secondary Breakage. Forged connecting link, protected by deep recess, adaptable for swivel or shackle. Strong alloy steel pin. Furnished complete as shown.

2000 to 8000 lbs.

Stock Shipments

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Cape Ann Anchor & Forge Co.

Gloucester - Massachusetts

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PYRASTEEL's amazing record of service is demonstrated by the old type Kiln Ring, shown at left, which withstood high temperatures in a large cement plant in Dallas, Texas, for over 14 years.

This solid ring casting, recently scrapped, weighed 4200 lbs. Today's segmented type Kiln End of the same size would save at least one ton in weight, and about $1000 in cost.

Over 76% of the annual cement output is produced in plants that now are using either or both of our alloys, PYRASTEEL and EVANSTEEL.

Durable PYRASTEEL Kiln Ends enable modern cement plants to avoid costly burnouts and shutdowns.

PYRASTEEL is economically adapted for many other high-heat applications, including conveyor screws, clinker coolers, feed pipes, and drag chains.

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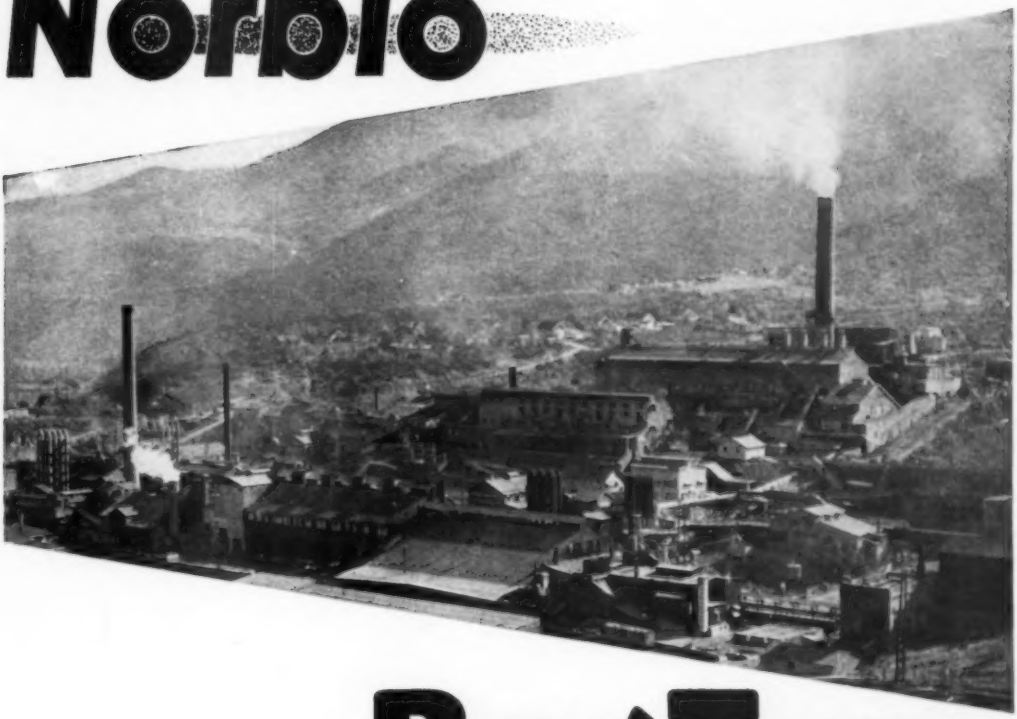
In the past 20 years over 1000 PYRASTEEL Kiln Ends have been installed. Some have lasted for 15 years without a failure.

Makers of Alloy Steel for Over 35 Years

CHICAGO STEEL FOUNDRY CO.

Kedzie Ave. & 37th St., Chicago 32, Ill.

Norblo



Bag Type

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Pays for Itself Quickly

Very high efficiency at very low cost of operation and maintenance in heavy duty continuous service is the record of Norblo Automatic Dust Collection in zinc and lead smelting, cement and other rock and chemical products, mining and manufacture, and in all types of grain milling and processing.

Adjustment for varying dust loading can be made in a few minutes without shutting down.

Write for Norblo Bulletin 162-4 for detailed description of design features, dimensions and capacities of heavy duty automatic bag type dust and fume collectors.

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Automatic and Standard Bag Type Fume and Dust Collectors, Norblo Centrifugal and Hydraulic Collectors, Cement Air Cooling Systems, Exhaust Fans

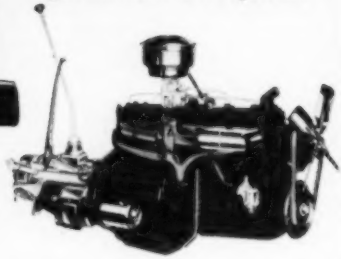
NOW! The most powerful 6-cylinder Ford Truck ever built!

New ROUGE **254** SIX

ENGINE

FOR THE HEAVY DUTY F-6

Thoroughly Proved in Industrial Engine and Motor Coach Operation



In Ford Series F-6—110 Horsepower, 212 lbs.-ft. Torque
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New Ford 110-H.P. engine plus new 4-speed Synchro-Silent transmission make Series F-6 the standout performer in its class!

THE BRAND NEW Rouge 254 Truck Six gives you new power, new performance in the heavy-duty field.

This 254 cu. in. powerhouse gives you the latest engineering ideas. Free-turn, self-cleaning exhaust valves, faced with durable cobalt-chrome alloy. High-lift camshaft for increased valve opening. Chrome-plated top piston ring for longer cylinder wall life.

You get these and many other new features in the new "Rouge 254" available in Ford Model F-6. You get power that makes the F-6 the most powerful 6-cylinder Ford Truck ever built. You get the brand new 4-speed Synchro-Silent transmission. You get Bonus* Built construction which means big reserves of strength and power. See your Ford Dealer. Get all the facts about the new "Rouge 254," the fourth in a great line of Ford Truck engines.

***BONUS:** *"Something given in addition to what is usual or strictly due"—Webster*

THE NEW FORD 254 ENGINE gives you all these modern design features!

CHROME-PLATED top piston ring for better lubrication, longer cylinder life.

AUTOTHERMIC aluminum alloy pistons with solid skirt. Steel strut controls piston to wall clearance.

HIGH-LIFT camshaft for increased valve opening, greater power.

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COBALT-CHROME faced exhaust valves for hard contact surface giving longer wear.

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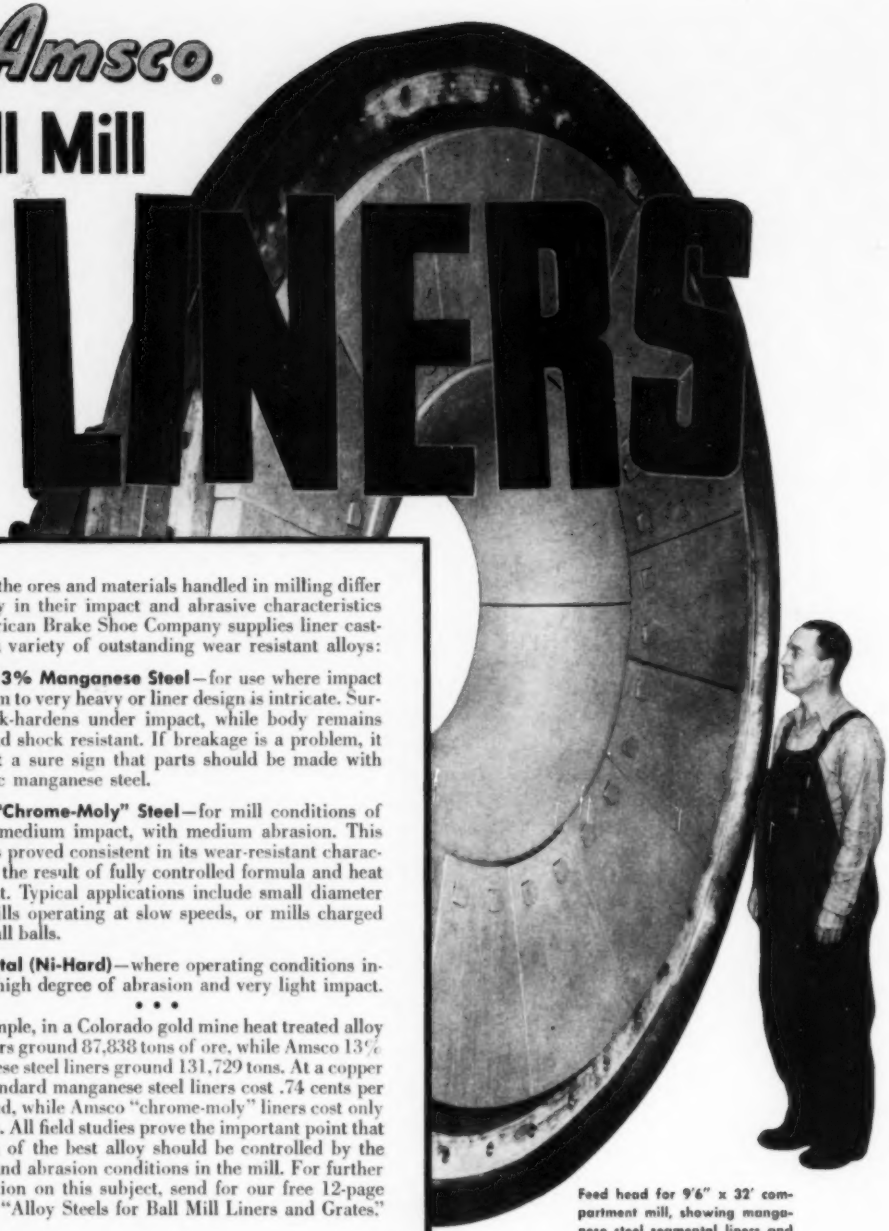
Amsco Ball Mill LINERS



Because the ores and materials handled in milling differ so widely in their impact and abrasive characteristics . . . American Brake Shoe Company supplies liner castings in a variety of outstanding wear resistant alloys:

Amsco 13% Manganese Steel—for use where impact is medium to very heavy or liner design is intricate. Surface work-hardens under impact, while body remains tough and shock resistant. If breakage is a problem, it is almost a sure sign that parts should be made with austenitic manganese steel.

Amsco "Chrome-Moly" Steel—for mill conditions of light to medium impact, with medium abrasion. This alloy has proved consistent in its wear-resistant characteristics, the result of fully controlled formula and heat treatment. Typical applications include small diameter mills, mills operating at slow speeds, or mills charged with small balls.

ABK Metal (Ni-Hard)—where operating conditions involve a high degree of abrasion and very light impact.

• • •

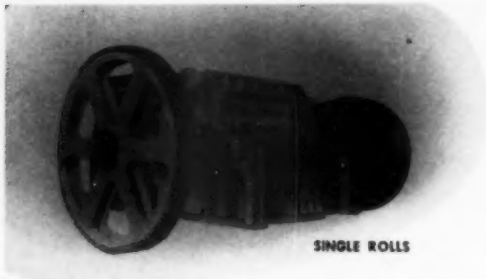
For example, in a Colorado gold mine heat treated alloy steel liners ground 87,838 tons of ore, while Amsco 13% manganese steel liners ground 131,729 tons. At a copper mine standard manganese steel liners cost .74 cents per ton milled, while Amsco "chrome-moly" liners cost only .68 cents. All field studies prove the important point that selection of the best alloy should be controlled by the impact and abrasion conditions in the mill. For further information on this subject, send for our free 12-page booklet, "Alloy Steels for Ball Mill Liners and Grates."

Feed head for 9'6" x 32' compartment mill, showing manganese steel segmental liners and throat liners.

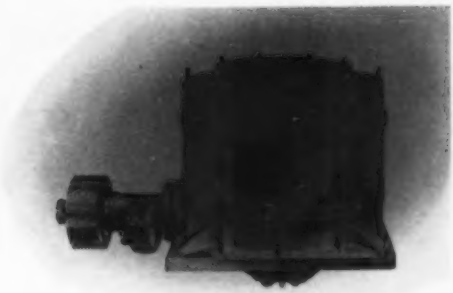
AMERICAN Brake Shoe COMPANY

AMERICAN MANGANESE STEEL DIVISION
CHICAGO HEIGHTS, ILL.

Foundries at Chicago Heights, Ill., New Castle, Del., Denver, Colo., Oakland, Calif., Los Angeles, Calif., St. Louis, Mo.
Offices in principal cities. In Canada: Joliette Steel Limited, Joliette, Que.



SINGLE ROLLS



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For years Pennsylvania has been working with and helping operators with all kinds of crushing problems. This accumulated experience plus a laboratory where the materials you want to crush are tested in a crushing set-up that duplicates your operating conditions, guarantees results before you go to the expense of purchasing and installing equipment. And there's another point that makes for best results for you. No one type of crusher meets all requirements. Pennsylvania has a varied line—a number of types of crushers to fit various conditions. Thus again you are more likely to get the crusher that gives the most desirable product at the lowest operating cost when you "Call In Pennsylvania." We'll be glad to send you bulletins on any of the crushers listed here.

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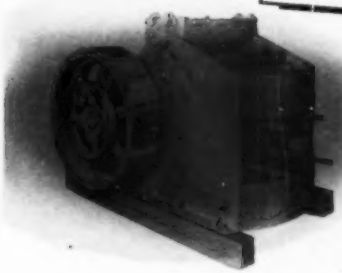
Years of experience

PLUS

A laboratory that duplicates your operating conditions



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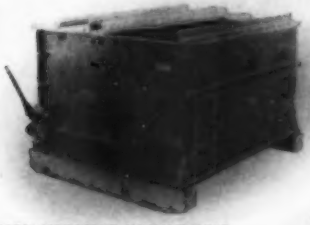
REVERSIBLE IMPACTORS



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REVERSIBLE HAMMERMILLS

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A few essential specifications of the heavy-duty 45 are listed here so you can compare them with other ¾ yard shovels. Make your own comparison and you will buy BAY CITY for the biggest value in excavating and material handling equipment. Let's get acquainted — Write for catalog today. BAY CITY SHOVELS INC., Bay City, Michigan

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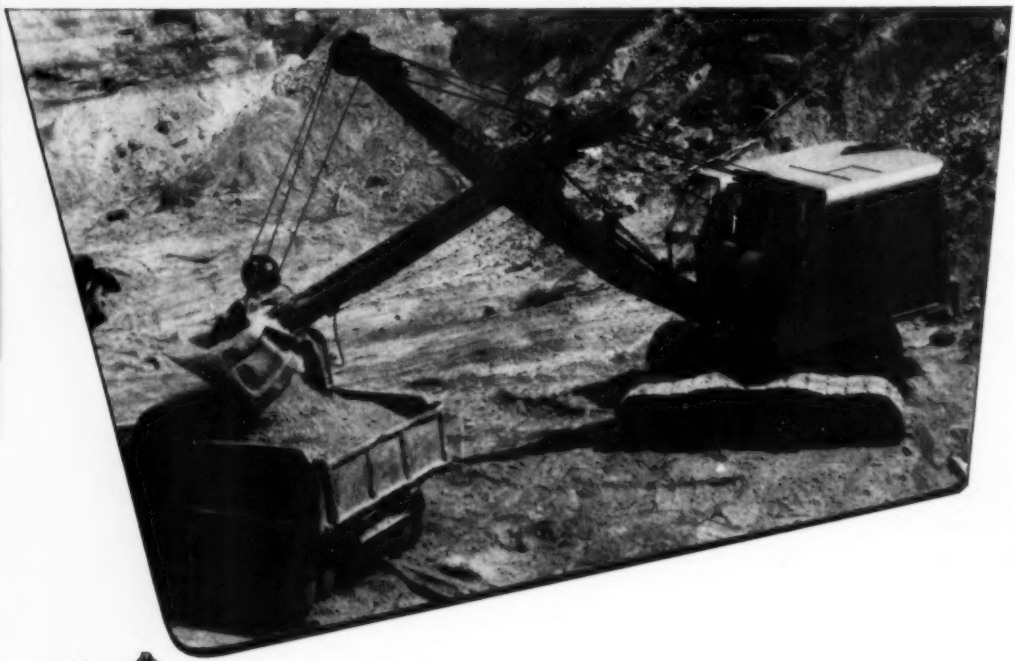
WEIGHT	45,000 lbs.	
POWER	81 HP @ 1200	
ENGINE DISPLACEMENT	517 Cu. In.	
SHOVEL BOOM	19'-0"	
CROWD	One-piece Chain	
DIGGING RADIUS 45°	28'-1"	
CRANE BOOM (STD)	35' Pin-connected	
CRANE CAPACITY, 10' RAD.	27,300 lbs.	
BASES	Cast alloy steel	
GEARS	Helical Cut	
CLUTCHES	Mechanical power	
CRAWLER LENGTH	12' 6"	



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Be sure to ask for this new, free booklet . . . It's packed with helpful information: *describes* characteristics . . . *lists* all stock sizes . . . *illustrates* the 6 bar types available. Free copy will be sent by return mail.

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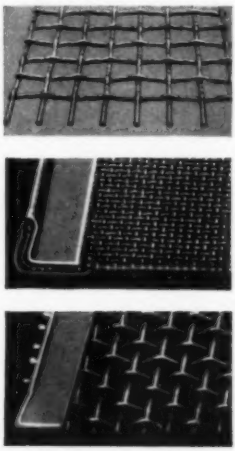
If you are a cost-minded operator, we invite you to try Wissco SUPER-TEMPERED Precision Screens. A test against your present screens will reveal how they cut maintenance costs to minimum proportions. Write to our nearest office for full details.



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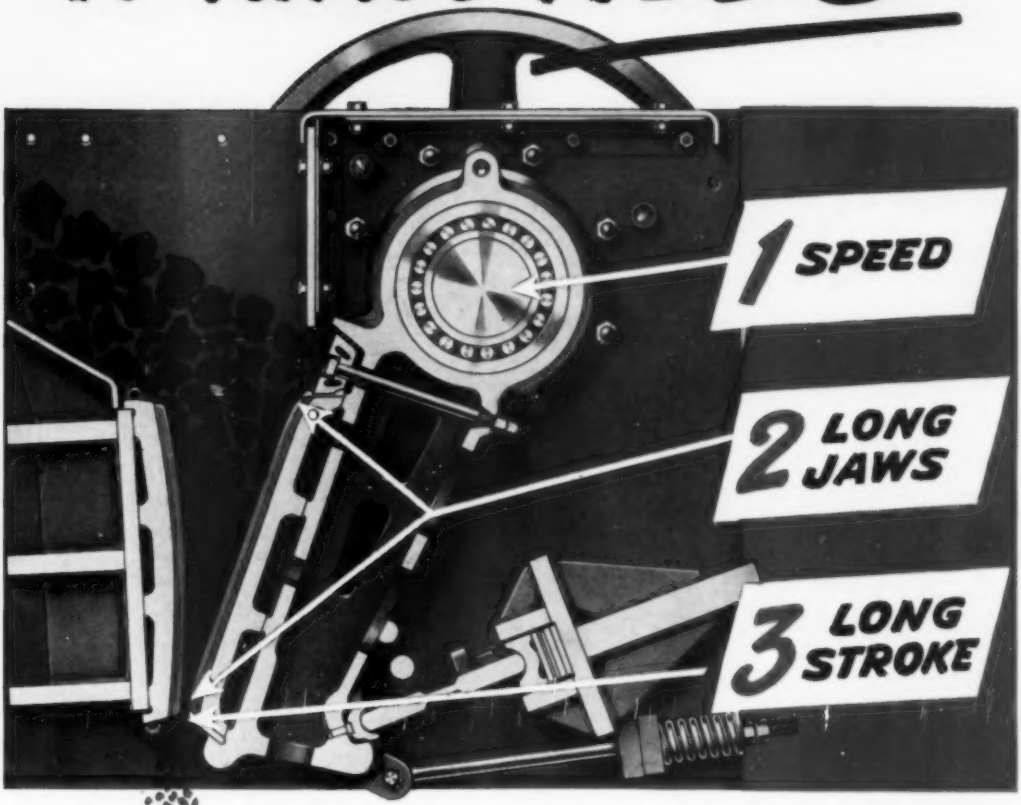

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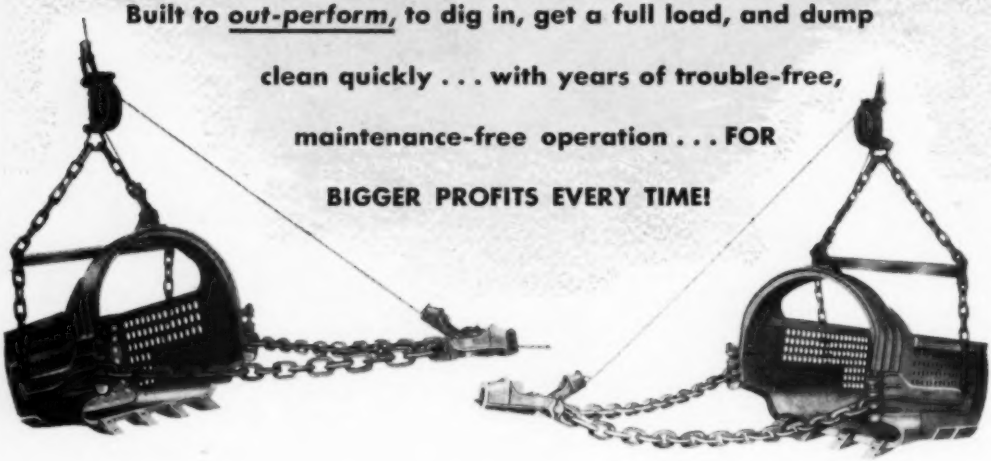

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The New TELSMITH GYRASPHERE Crushers...

Send for Bulletin No. 274

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Style S—Standard
Style FC—Fine Crushing

Style S—Standard Gyrasphere has—

1. Longer Crushing Stroke giving greater capacity.
2. Larger Roller Thrust Bearings, both now located at top of eccentric.
3. More Eccentric Bearing Area in upper crushing zone.
4. Longer Springs to pass larger tramp iron.
5. New Location of Drive Gears for more economical operation.
6. Easier Accessibility for lower maintenance.
7. Available with either coarse or medium bowl.

Style FC—Fine Crushing Gyrasphere has these additional improvements—

1. New Feed Distributor for even feeding and a more uniform product.
2. Different Shape of Mantle and Concave with longer parallel crushing zone for finer product.
3. New Gun-Lock type mantle and concave holding devices — automatically self-tightening, easier to change.
4. More Springs for greater crushing pressures.
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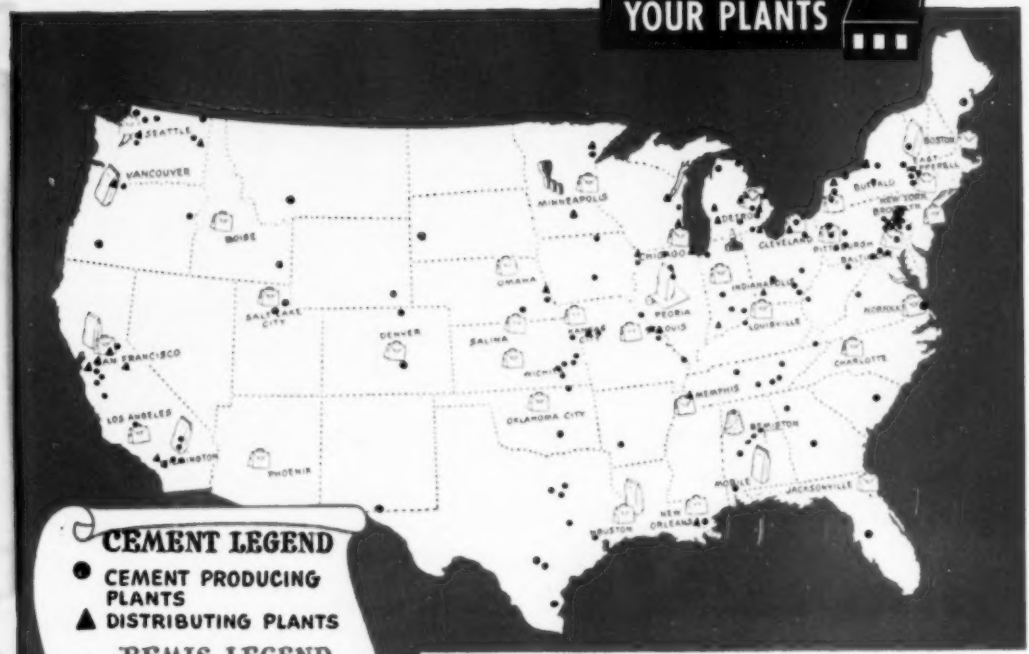

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by designing a complete handling system around a push button

Growing demand by building and highway operations called for a modern, high capacity sand and gravel plant in the Phoenix area. A concrete block plant made new demands and threatened a bottleneck on materials. Adequate speedy production was assured when S-A engineers designed and equipped this gravel plant so that it can be operated from one centrally located push button panel.

This one example is typical of the ingenuity, the engineering skill, the masterful design technics, employed by S-A engineers. Their almost half a century of experience with all types of bulk materials handling systems for a wide variety of industries, enables them to recommend the most economical handling for any specific requirement.

Ask for the recommendations of S-A engineers on your bulk materials handling today. There's no obligation on your part for the counsel of S-A engineers.

UNION ROCK AND MATERIALS CO.
Phoenix, Arizona

At this S-A designed gravel plant, trucks dump aggregate materials from river bed into 40-ton hopper. Reciprocating plate feeder under hopper feeds rock to an inclined belt conveyor which discharges to an S-A vibrating screen. Fines are passed to another belt conveyor. Oversize materials are sent through crusher and on same belt with fines to top of plant. Gravel and sand is then washed, screened, recrushed, graded and conveyed to storage.

STEPHEN S-A DAMSON MFG. CO.

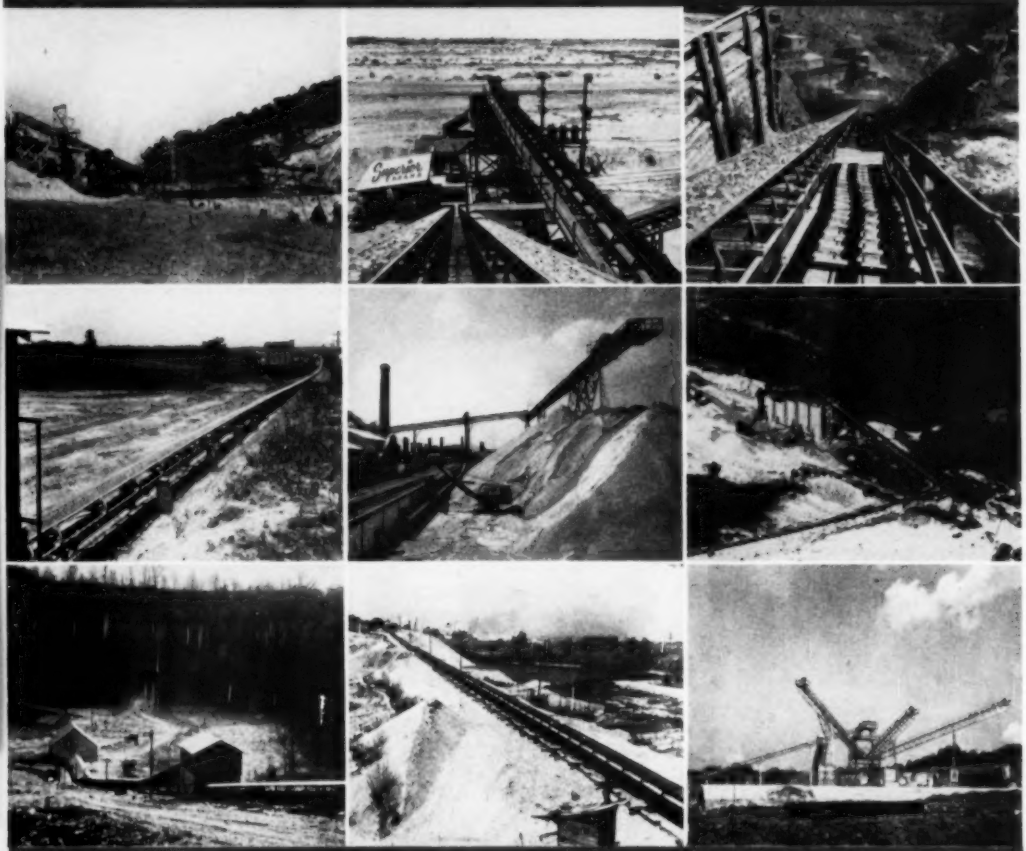
29 Ridgeway Avenue, Aurora, Illinois — Los Angeles, Calif. • Belleville, Ontario

DESIGNERS AND MANUFACTURERS OF ALL TYPES OF BULK MATERIALS HANDLING EQUIPMENT

STONE HANDLING!

These are tough jobs—requiring sturdy equipment for long life and uninterrupted service.

That's why these operators specified **Continental**



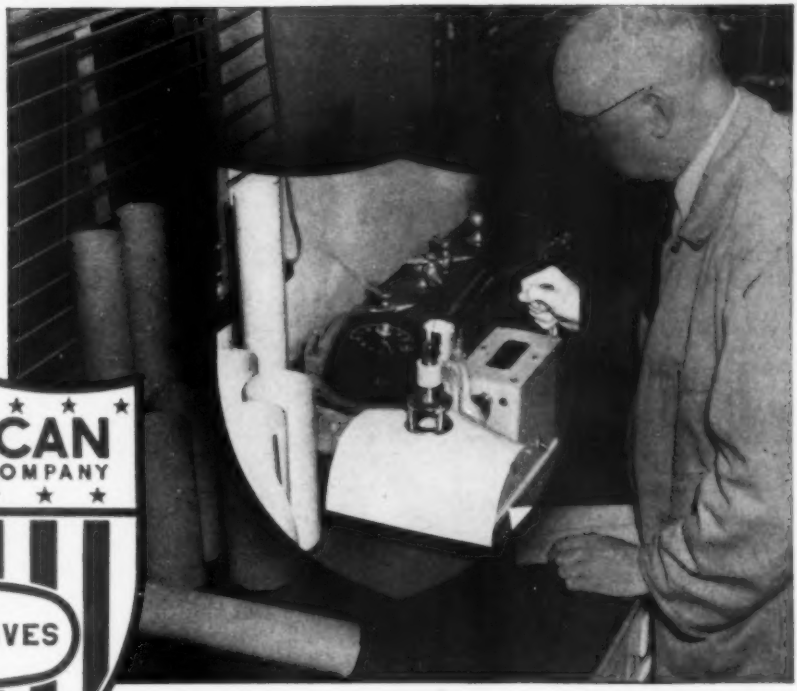
OTHER PRODUCTS: Elevators, Feeders, Screw Conveyors, Pulleys, Trippers, Buckets, Sprockets, Takeups and Bearings.

INDUSTRIAL DIVISION

CONTINENTAL GIN COMPANY

BIRMINGHAM, ALABAMA

ENGINEERS CGC ATLANTA • DALLAS • MEMPHIS CGC MANUFACTURERS



AMERICAN CYANAMID COMPANY

EXPLOSIVES

BETTER *BREAKAGE* FOR YOUR COAL STARTS IN AMERICAN LABS...

Your primary interest in explosives is getting the *best possible* breakage of your coal veins. And that is exactly what AMERICAN Explosives offer you—through intensive research, close chemical control, painstaking care in manufacture and inspection.

AMERICAN research is vitally interested in *every detail* that affects the quality of explosives. Take paper, for instance. Because the cartridge wrapper is a part of the explosives, it receives the same exacting physical and chemical attention that is given every other ingredient that goes into AMERICAN blasting materials.

There is an AMERICAN explosive for all your blasting requirements—available for quick delivery from well-located plants and distributing magazines. For dependability, safety, speed and over-all economy, always specify AMERICAN.

Capable field engineers are available at your call

★ HIGH EXPLOSIVES ★ PERMISSIBLES ★ BLASTING POWDER ★ BLASTING ACCESSORIES

AMERICAN CYANAMID COMPANY

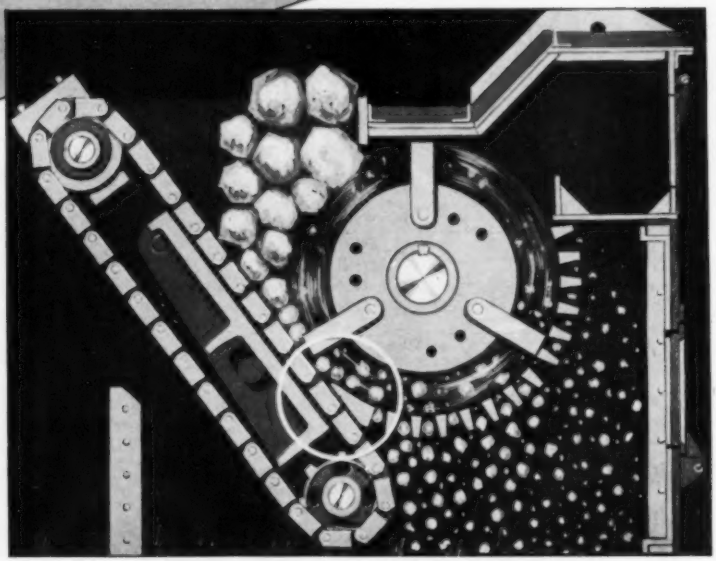
EXPLOSIVES DEPARTMENT

30 ROCKEFELLER PLAZA • NEW YORK 20, N. Y.

SALES OFFICES: PITTSBURGH, PA. • BLUEFIELD, W. VA. • SCRANTON, PA. • CHICAGO, ILL. • POTTSVILLE, PA. • MAYNARD, MASS.

THE ONE and ONLY NON-CLOG

The Tried and Proven DIXIE Hammermill



Better crushing begins here! Cross section drawing illustrates "heart" of Dixie Non-Clog Hammermill where Extended Moving Breaker Plate construction guards against passage of oversize material . . . results in improved grinding control for unvarying uniformity of product.

Your ASSURANCE of GREATER PRODUCTION at LESS COST

The one and only Dixie NON-CLOG Moving Breaker Plate Hammermill* sets a new standard of crushing efficiency in the reduction of wet, sticky materials.

If you have wet, sticky material to crush, if you have difficulty in reaching and maintaining desired production, *if you have any crushing problem at all,* it will pay you to take advantage of this vastly improved crushing principle.

* *U. S. Patents Granted & Pending*

Dixie Non-Clog Hammermills are made in sizes ranging from 24" up to 72" diam.

WRITE TODAY FOR COMPLETE DETAILS

DIXIE MACHINERY MFG. CO.

MAIN OFFICE AND PLANT

4208 Goodfellow Ave., St. Louis 20, Mo.

20,000 HR. TRAXCAVATOR "Buys" Mate ...Boom Road System Improvement Program

● Jordan Township, Whiteside County, Illinois, put the TRAXCAVATOR at the left to work, in April, 1939. Within 7 years, this machine had loaded over 102,000 cubic yards of gravel. So many other tax-saving, community-aiding jobs were found, it couldn't keep up with needs for its services!

A Diesel mate was bought for this veteran by the township with savings earned. By now, the first unit has operated over 20,000 hours. And the pair keeps on gratifying taxpayers!

They dig and load up to 32,000 (total) yards of road gravel annually. They do special ditch work; excavate for culverts; clear snow; pull hedge; change stream courses; load "borrow" dirt for special purposes; are winter-ready to load skid-proofing materials after sleet storms.

"What gratifies us especially is the variety of work beyond its regular duties this machine has been able to do. Our records show that the average repair expense on our first machine has been less than 15c per hour," states Jordan Township Commissioner R. E. Allison, Sterling, Illinois.

Trackson builds TRAXCAVATORS to turn the traction-harnessed horsepower of "Caterpillar" Diesel Tractors into big yardage production. To match tractor strength and year-resistance, and to provide movers of materials, from shot-rock to city rubbish, with more savings than available elsewhere.

See your Trackson-"Caterpillar" Dealer about early delivery of the TRAXCAVATOR size you need, or write to **Trackson Company, Dept. PQ10, Milwaukee, Wis.**

Here is the Model T4, today's version of Jordan Township's 20,000-hour TRAXCAVATOR. 4 TRAXCAVATOR Models, to team with D2, D4, D6 and D7 Tractors.

Jordan Township's TRAXCAVATOR team is shown loading earth in Township trucks for special fill purposes. Gravel loading is their main job!

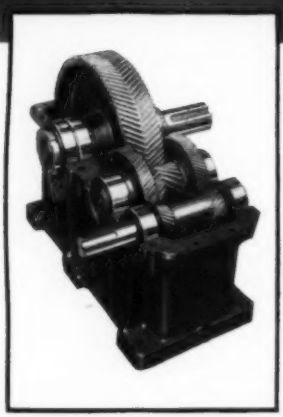
TRAXCAVATOR

REG. U. S. PAT. OFF.

...The Original Tractor Excavator

Jones

HERRINGBONE SPEED REDUCERS



Jones Herringbone Speed Reducers in ratings from 1 to 400 horsepower, and all the other types of Jones Speed Reducers, gears and transmission products are playing their part in speeding up production.

These are products that are built with old time craftsmanship and once they start rolling they keep on rolling.

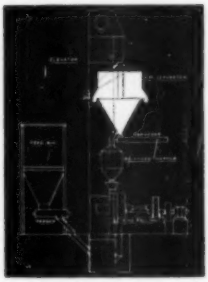
If any of our products or engineering service will be helpful to you we shall do our best to render as much assistance as possible. Our Bulletin No. 80 "Jones Drives for Industry" will give you a clear picture of our transmission products and manufacturing facilities. Your request will bring a copy by return mail.

W. A. JONES FOUNDRY & MACHINE CO., 4441 Roosevelt Road, Chicago 24, Illinois

HERRINGBONE • WORM • SPUR • GEAR SPEED REDUCERS • PULLEYS • GEARS • WHEELS
SHEAVES • ANTI-FRICTION PILLOW BLOCKS • FRICTION CLUTCHES • FLEXIBLE COUPLINGS

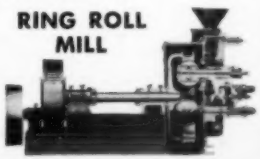
STURTEVANT AIR SEPARATORS

Produce Aggregates that meet Government Specifications



Sturtevant Air Separator in "closed circuit" with pulverizer. This combination increases tonnage and reduces costs in all types of industry.

RING ROLL MILL



Range 10 to 200 mesh. Use this mill in closed circuit with Sturtevant Air Separators.

On dam projects throughout the country, Sturtevant Air Separators are helping contractors meet U. S. Corps of Engineers specifications for proper analysis of aggregates. Here's how — Sturtevant Air Separators de-dust and remove the fine fraction according to the mesh required. Dry or damp sand can be handled in any tonnage desired in ranges from 30 mesh and finer to eliminate screen in the production of intermediate sizes.

The de-dusted sand of proper mesh is then inter-blended with the screened sand or aggregates in the proper proportions providing aggregates that meet specifications.

Sturtevant Air Separators are fast and accurate. They increase production of aggregates, cut production costs.

Investigate Sturtevant Air Separators for your jobs. Write for details, today.

STURTEVANT MILL COMPANY

104 CLAYTON STREET, BOSTON 24, MASSACHUSETTS

Designers and Manufacturers of: CRUSHERS • GRINDERS • SEPARATORS • CONVEYORS MECHANICAL DRYS and EXCAVATORS • ELEVATORS • MIXERS

TRUCKS and SHOVELS keep on the *move*...

when you detonate with PRIMACORD

You can figure on better digging when you shoot with Primacord. *Operations speed up all along the line.*

Primacord does this with a combination of forces that team up to give you more complete fragmentation. Down-hole lines initiate the whole charge instantly, from top to bottom, with all the power of primer cartridges. Main lines can be laid out so that front holes go a split second before succeeding ones, allowing for planned relief of burden.

You can get Primacord, wound on easy-to-handle spools, in a grade to meet every blasting condition. It's insensitive to stray currents, and hooks up as fast as you can tie square knots or half hitches. Ask your supplier about Primacord, or write direct to The Ensign-Bickford Company, Simsbury, Connecticut. P-23

PRIMACORD-BICKFORD Detonating • Fuse •

***Also* Ensign-Bickford Safety Fuse Since 1836**

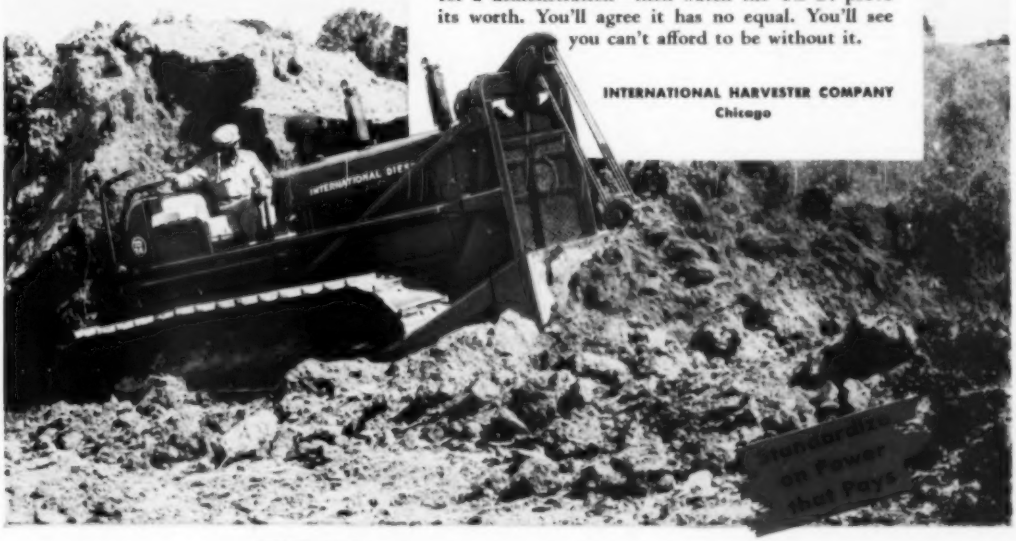
Champion OF 'EM ALL!

What makes a champion in the ring? Punching power, speed, maneuverability. A champion in the earthmoving arena needs power, speed and maneuverability too, and the International TD-24 has them all. No other crawler can match its power, its effortless ease of control, its range of eight speeds both forward and reverse. No other crawler can give you its unequaled work capacity.

The Arundel Supply Company, sand and gravel pit operator near Washington, D.C., says the TD-24 has "Proved its worth to us. It stripped over two acres in a little less than three hours' time, which is less than half the time we could have accomplished it with a dragline. More important, it did the job much cheaper."

Now is the time to see for yourself what makes the International TD-24 the "Champion of 'em All." Ask your International Industrial Power Distributor for a demonstration—then watch the TD-24 prove its worth. You'll agree it has no equal. You'll see you can't afford to be without it.

INTERNATIONAL HARVESTER COMPANY
Chicago

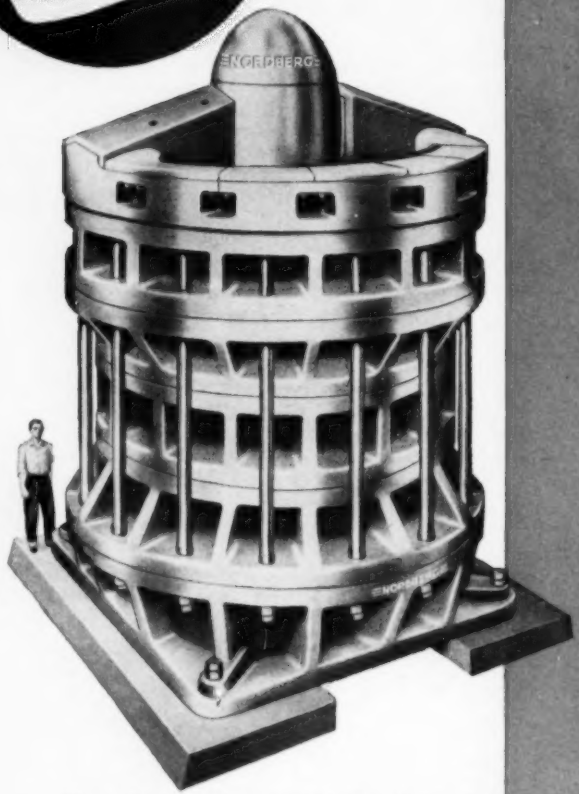


CRAWLER TRACTORS
WHEEL TRACTORS
DIESEL ENGINES
POWER UNITS

INTERNATIONAL HARVESTER

INTERNATIONAL INDUSTRIAL POWER

BIG NORDBERG MACHINERY



NEW NORDBERG 54" GYRATORY CRUSHER

HERE'S the answer to your biggest primary crushing problems. This huge 54" Nordberg Gyratory Crusher is the most massive machine of its size and type ever built. Designed for extremely heavy duty service under the most severe operating conditions. Built of cast steel sectionalized main frame reinforced with large diameter tie rods. Each bearing independently pressure lubricated with temperature-controlled filtered oil.

Nordberg Gyratory Crushers are of the heavy duty type, built in sizes ranging from 30" to 72" feed openings to meet your toughest production requirements.

These three machines are typical examples of Nordberg engineering and development of big machinery for crushing and processing operation. This Nordberg machinery is used all over the world by efficient operators.

For complete details, write for illustrated literature.

NORDBERG MFG. CO.
MILWAUKEE 7, WISCONSIN
NEW YORK • SAN FRANCISCO • WASHINGTON • SPOKANE
MEXICO, D. F. • LONDON • TORONTO • JOHANNESBURG

NORDBERG

Gyratory Crushers

Jaw Crushers

Symons Cone Crushers

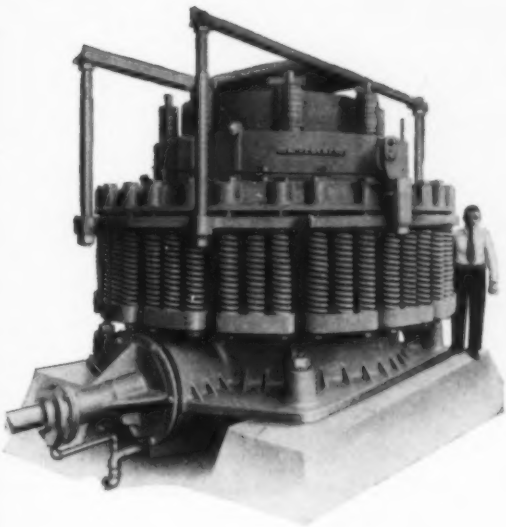
Apron and Pan Feeders

Vibrating Bar Grizzlies

FOR NON-METALLIC MINERALS

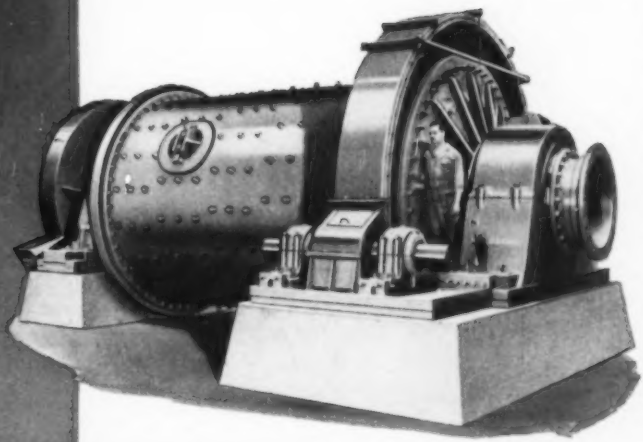
SUPERHEAVY DUTY 7' SYMONS CONE CRUSHER

HERE is the most rugged and heaviest Symons Cone Crusher ever built. Symons Cone Crushers are known everywhere for their production of greater quantities of sized products, within closer control limits, with trouble-free lower cost operation. There is a Symons Cone Crusher best adapted to your needs for making a marketable crushed product from stone, gravel or slag. They are available in Standard, Short Head, and Intermediate types in a wide range of sizes to meet any requirement.

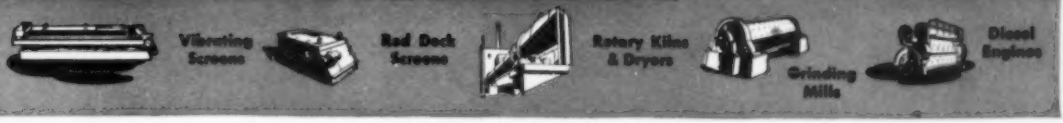


NORDBERG 10'8"x17'0" GRINDING MILL

This is the largest diameter Grinding Mill of its length ever built. This huge mill is but one of numerous Nordberg Grinding Mills for wet or dry grinding. There is a complete line of large Nordberg Grinding Mills available in ball, rod, tube, pebble and compartment types.



Machinery for processing ores and industrial minerals

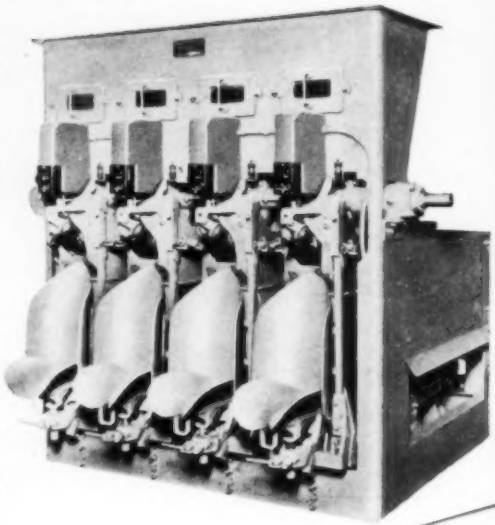


Your brand stays bright–

When your product is packed

by this St. Regis

filling machine



You get the **cleanest** cement bag there is—
a bag that gives your brand the **attractive display** it deserves—
when you use a combination of St. Regis Multiwall
Paper Bags and a St. Regis **150-FC Valve Bag Packer.**

The "delayed discharge" feature of this
4-tube St. Regis **Filling Machine** is the answer.
It keeps every St. Regis Multiwall Paper Bag **clean**
at the critical point—right on your packing line.

You can get full information about the 150-FC quickly—just ask your nearest St. Regis Sales Office.

SALES SUBSIDIARY OF ST. REGIS PAPER COMPANY

ST. REGIS

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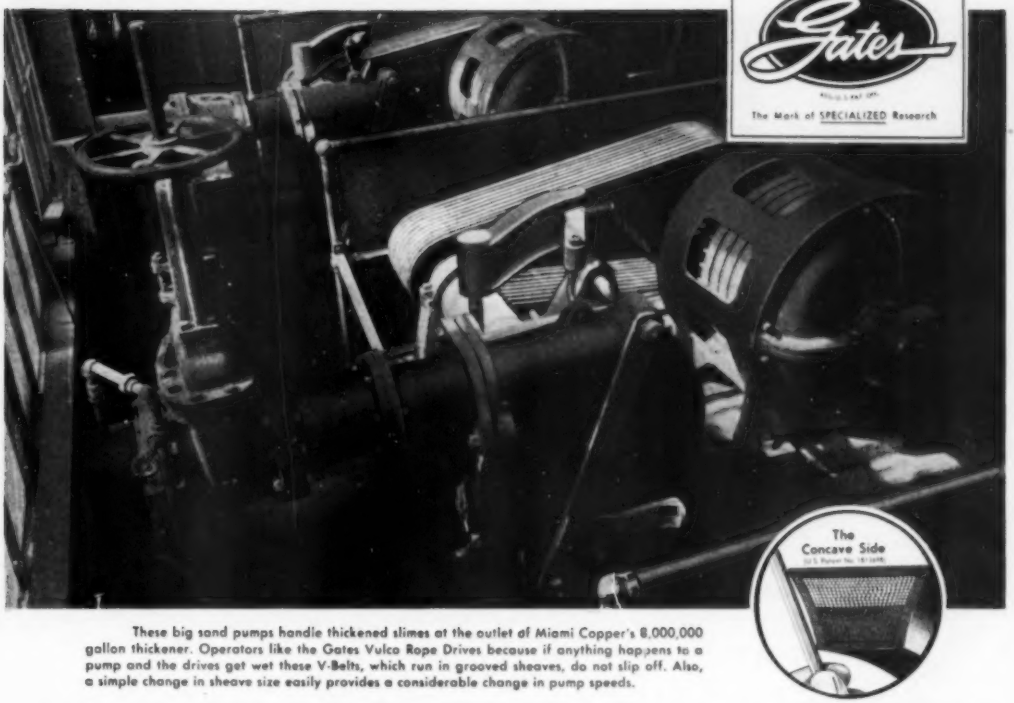
YOU BUY PROTECTION WHEN YOU BUY MULTIWALLS



These big sand pumps handle thickened slimes at the outlet of Miami Copper's 8,000,000 gallon thickener. Operators like the Gates Vulco Rope Drives because if anything happens to a pump and the drives get wet these V-Belts, which run in grooved sheaves, do not slip off. Also, a simple change in sheave size easily provides a considerable change in pump speeds.

Two Distinct *Savings* in *V-Belt Costs* Are *Yours* with Gates Vulco Ropes

A simple test that takes less than two minutes will save you many dollars in V-Belt costs. Here it is—

Have someone bend a V-Belt exactly as it bends in going around its pulley. As it bends, grip its sides with your fingers. You will *feel* those sides *change shape*. In a straight-sided V-Belt, the sides become *convex* as the belt bends. And note how the sides *bulge out*. (Figures 1 and 1A)

Now try the same test with a V-Belt that is built with the concave side. You will feel a change in shape—but a *different result!* The sides do not become *convex*. Instead, they become perfectly straight. *The bent belt now has a shape that exactly fits its sheave groove*—as shown in Figures 2 and 2A.

Two distinct savings result. *First*—There is no side-bulge to cause uneven wear. The sides press *evenly* against the V pulley and therefore wear *uniformly*—resulting in *longer life!* Second—The *full width* of the sidewall grips the pulley—thus carrying heavier loads without slippage—and this *saves belts* and also saves *power!*

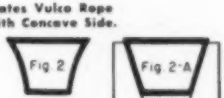
When you buy V-Belts, be sure you get the V-Belt with the Concave Sides... the Gates Vulco Rope!

What Happens When a V-Belt Bends

Straight-Sided V-Belt

How Straight-Sided V-Belt Bulges in Sheave-Groove.

Gates Vulco Rope with Concave Side.



No Side Bulge. Precise Fit in Sheave Groove.

C. S. 501

THE GATES RUBBER COMPANY
DENVER, U.S.A.
The World's Largest Makers of V-Belts

GATES VULCO ROPE DRIVES
Engineering Offices and Jobber Stocks **IN ALL INDUSTRIAL CENTERS** of the U.S. and 71 Foreign Countries

OW PRICE
ow Operating
Cost
ow Maintenance

3 NEW CEDARAPIDS

...ready now

HIGH CRUSHING AND SCREENING EFFICIENCY
GOOD PRODUCTION • 100% PORTABLE

THREE new *low priced* crushing and screening plants added to the complete Cedarapids line is good news for your 1950 budget. Now you can get true Cedarapids quality for a low capital investment—the *better* value that results from Cedarapids volume production of a complete size range of aggregate producing equipment. These three new plants, specifically designed for moderate sized jobs, are quality built throughout for all the crushing and screening efficiency of the big capacity plants. Manufacturing economies resulting from simplified design and volume production are passed on to you in lower first cost. Good capacity, low operating and maintenance costs, and long service life are the economical answer to your aggregate producing problems. Write for full details, specifications and prices.

IOWA MANUFACTURING COMPANY • Cedar Rapids, Iowa, U.S.A.

A low priced, simple, heavy duty unit for producing low cost crushed gravel and rock in one pass. Recommended for jobs where the material is screened into only one size, the Single-Pass is ideal for road maintenance work, jobs in locations that are inaccessible to heavier types of equipment and wherever portability and fast set-up are important. High mobility permits inexpensive moving to gravel pits close to the road, resulting in low hauling costs. Extremely low plant maintenance and operating costs are made possible by Cedarapids high quality construction, simple design and the few moving parts. Four sizes are available with either plain or roller bearing crushers: 1016, 1020, or 1024, or 1216 twin jaw. Bulletin SSP-1 gives complete information.

Cedarapids
Built by IOWA

THE IOWA LINE *of Material Handling Equipment Includes:*

ROCK AND GRAVEL CRUSHERS • BELT CONVEYORS • STEEL BINS • BUCKET ELEVATORS • VIBRATOR AND REVOLVING SCREENS • UNITIZED ROCK AND GRAVEL PLANTS • FEEDERS • TRAPS • PORTABLE POWER CONVEYORS • PORTABLE STONE AND GRAVEL PLANTS • REDUCTION CRUSHERS • BATCH TYPE AND VOLUMETRIC TYPE ASPHALT PLANTS • HAMMERMILLS • DRAG SCRAPER TANKS • WASHING PLANTS • SOIL COMPACTION UNITS • STEEL TRUCKS AND TRAILERS • KUBIT IMPACT BREAKERS

PORTABLE CRUSHING PLANTS

for 1950!

THE NEW ROCK-IT

Double-duty performance in one machine! This high capacity crushing and screening unit, all on one chassis, does the work of two single crusher units, *and at lower cost.* It produces "agline" or road rock, or both, with an output of 60 to 80 t.p.h. of 50% minus ½" and 50% plus ¾" to 1" of limestone, crushing from 18" stone down to specification "agline" in one operation, with one operator. The famous Cedarapids horizontal "Agline" Screen permits extremely accurate gradation. Quickly set up, the ROCK-IT can be moved around the pit without dismantling. Low first cost and low operating and maintenance costs increase profit saving. Available in three sizes — Model 20 with the 3055 Kennemetal, Model 30 with the 3055 mill, and Model 22 with the 3022 roll crusher. All have 18" x 24" primary jaw crushers. Get full details from Bulletin RIP-1.

THE NEW HAWKEYE SERIES

Low first cost, thrifty operation and low maintenance mean better roads at lower costs per mile. Producing from 50 to 75 t.p.h. the Hawkeye plant moves with the job to the nearest gravel bank, saving the cost of long hauls. This sturdy, lightweight plant is 100% portable for easy access to out-of-the-way locations and can be taken over almost any roads and bridges. Extremely low operating costs are made possible by the simple design and use of Cedarapids high quality equipment throughout. The large capacity screen and crusher handle a wide variety of conditions, and produce screened sand as well as accurately sized road gravel. With a Cedarapids Hawkeye on the job site, average gravel can be crushed at lower cost per ton, with savings on maintenance, hauling costs, eliminating pit run boulders and oversize cobbles from the roadway. Four sizes available, with 1016, 1020 or 1024 either plain or roller bearing crusher or a 1216 twin jaw roller bearing crusher. It's a complete plant with closed circuit and it is low priced. Write for Bulletin HAWK-1.

IOWA MANUFACTURING COMPANY

Cedar Rapids, Iowa, U.S.A.

30%-50% lower crushing cost

with Williams "*Super-Slugger*" Crusher

BECAUSE POWER SHOVEL LOADED STONE IS CRUSHED TO 1½ INCH OR ¾ INCH . . . *IN ONE OPERATION!*

Here's the extra heavy-duty hammermill that spells that welcome word *economy*. Built by Williams, the pioneer of the idea of crushing quarry stone to small sizes in one operation, the new Super-Slugger represents the latest improvements and the accumulated experience of many years in building heavy-duty hammermills. Savings result not only in initial investment . . . cost of foundations, conveyors, drives and buildings, but in faster operation and lower power consumption. If you require high tonnage output and a machine that can "take it" your investment in the Super-Slugger will pay off in more "pay-load" . . . and more profit! Write for Bulletin 634 for detailed information of the newest Williams Super-Slugger.

WILLIAMS ALSO MAKES . . .

Heavy-duty hammermills in smaller sizes for all quarry operations; impact and roller mills for 200 to 325 mesh grinding; drier mills; air separators; vibrating screens; steel bins; complete "packaged" crushing and grinding plants.

WILLIAMS PATENT CRUSHER & PULVERIZER CO.
802 ST. LOUIS AVE. ST. LOUIS 6, MO.

WILLIAMS

CRUSHERS GRINDERS SHREDDERS

MARION 362

All-Purpose 1½ Cu. Yd. machine with a

PROVEN RECORD

of outstanding performance

SOME MARION 362 FEATURES

VERSATILE—Easily convertible frontend equipment for shovel, dragline, clamshell, crane, pull shovel, drop ball and grapple service. Conversions made quickly in field. No machinery changes except for drum laggings and sprockets.

SMOOTH CLUTCHES — Smooth, positive clutch action over the years. Swing, propel and crowd retract clutches never require adjustment; hoist and crowdout clutches have only one adjustment.

MARION AIR CONTROL—Compensating-type air control valves yield full machine power when 12 pounds of pressure is applied to control levers. No production lag because of operator fatigue. Air control eliminates levers, bell crank, toggles, pins, etc.

ANTI-FRICTION BEARINGS—16 ball or roller bearings cover all principal friction points, resulting in greater operating economy, machine efficiency and fewer replacements.

SIMPLE, HEAVY-DUTY DESIGN—Only two horizontal shafts on machinery deck. Only 16 gears aside from front end equipment. Gears heat treated. Shafting of alloy steel. Main frame all welded for life-long perfect alignment.

MARION

POWER SHOVEL COMPANY

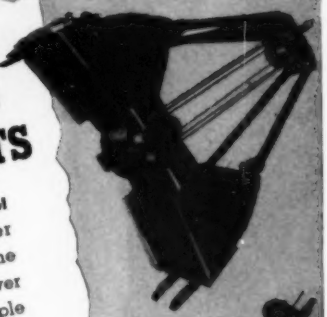
MARION, OHIO, U. S. A.

Offices and Warehouses in all Principal Cities

You Can't Beat Welded Construction

WELLMAN

Williams Type **BUCKETS**



• Wellman pioneered **welded rolled steel construction** for longer life and greater service. It's the extra strength that gives the extra, low-cost digging power. Whatever your requirements . . . whether for Multiple Rope, Power Arm, Dragline, Power Wheel or Special Service—specify Wellman! ⅜ to 16½ yd. capacity.

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THE WELLMAN ENGINEERING COMPANY

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HAS LARGE IMPACT CRUSHERS

LARGE AND SMALL PULVERIZERS For Ag Stone

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The Jeffrey Manufacturing Company
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FAST

IN TWO SENSES

Because the Super-Concrete Staves lay up readily, Neff & Fry Storage Bins are erected fast; i.e., in a comparatively short time.

The staves interlock together firmly. The tiers are securely bound with heavy galvanized steel rings. The materials are enduring. So Neff & Fry Bins stand fast; i.e., ruggedly, for a long time.

Experience over a period of almost 30 years proves that Neff & Fry Super-Concrete Stave Storage Bins serve from one generation to the next with virtually no upkeep cost. Many of the leading manufacturing, processing, mining, quarrying, distributing, and transportation companies of the country will testify that this is true.

We'll gladly give you the evidence. Get it before you contract for storage bins. Write, wire, or phone us.

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FOR ALL SORTS OF BULK FLOWABLE MATERIALS

THE NEFF & FRY CO., Camden, Ohio

take your pick of PERFORMANCE

• From the complete line of Oliver "Cletrac" Crawler Tractors and Oliver Industrial Wheel Tractors you can pick exactly the tractor you need and be assured of performance *in advance.*

The finest in industrial machinery is more than a slogan to Oliver . . . it is an accomplished fact that has been proved in year after year of outstanding performance. Design, materials, workmanship, and plant equipment are all based on one standard . . . the built-in dependability that adds up to more years of service in the field . . . lower operating and maintenance costs to you.

Combine this unsurpassed dependability with the *extra* service offered by your Oliver "Cletrac" Distributor . . . a complete line of industrial crawler and wheel tractors . . . a full line of allied equipment . . . complete service facilities and adequate stocks of genuine Oliver "Cletrac" repair parts . . . plus a broad background of field experience . . . and you'll see why you can take your pick of performance.

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OLIVER Cletrac SALES SERVICE

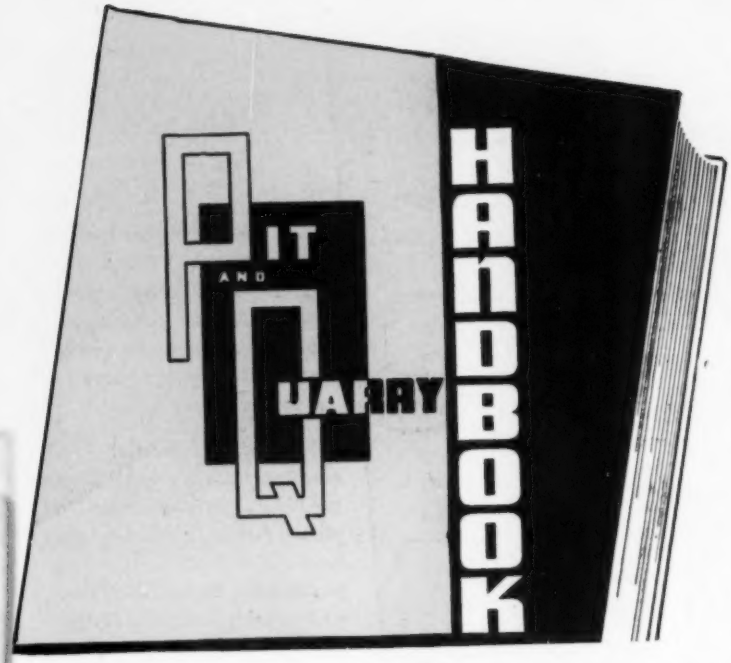
Cletrac

a product of

The OLIVER Corporation

Industrial Division, 19300 Euclid Avenue, Cleveland 17, Ohio

A Complete Line of Crawler and Industrial Wheel Tractors



An Indispensable Tool For Both Operator and Supplier of Equipment

The pit-and-quarry industries, in providing important basic raw materials, bear a large share of the responsibility for the success of America's industrial effort. For the producer the revised Technical Section of the 1949 Handbook provides a ready answer for many of his operating problems. For the concern supplying him with the machinery and equipment necessary to produce his materials, the 1949 Directory Section provides an accurate, up-to-the-minute list of all known producers of nonmetallic minerals and their products. No effort or expense has been spared to make the new Directory an efficient and highly useful source of information about producers. The number of changes made in the 1949 edition runs into the thousands.

STILL AVAILABLE

1949 Edition— Order Now

Directory Section listings appear two ways — (1) alphabetical by companies, (2) geographical by plants. You get company names, officers, location of plants, their capacity, and the names of the men who do the buying.

• 512 PAGES • 21 CHAPTERS • REFRIGERATIVE

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THE CONCRETE MANUFACTURER

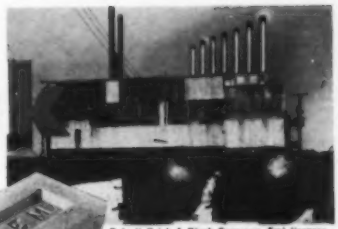
A SPECIAL SECTION OF PIT & QUARRY

AT LAST!

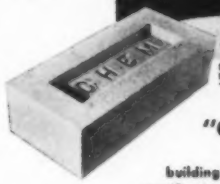
chem bric

A FACE BRICK OF HIGHEST QUALITY—

MADE WITH THE CHEAPEST MATERIALS KNOWN TO DATE



Detroit Brick & Block Company, first licensee by Jackson & Church Company to manufacture "CHEM BRICK"



"CHEM BRICK" . . .

the sensational, new building material . . . passes the A.S.T.M. specifications for first quality face brick and the most exacting freezing and thawing tests . . . yet no ingredient costs more than $2 per ton, including binder.

"CHEM BRICK" requires no cement or commercial lime . . . is made only with sand and waste materials.

A REAL HIGH QUALITY FACE BRICK WHICH CAN BE MADE CHEAPER THAN ANY COMMON BRICK ON THE MARKET TODAY

This quality product is finding a ready market in the Detroit area where it has brought usually expensive brick veneering within the reach of average purses. In addition to its low cost other features are its distinctive finish, color and uniformity which give any building that "quality appearance" when used as a facing material.

Besides being a fine face brick . . . "CHEM BRICK" is an all-purpose brick because of its low cost of manufacturing.

Boxed at left are excerpts from test reports on "CHEM BRICK" made by Pittsburgh Testing Laboratory. Note distinctive appearance of home pictured utilizing "CHEM BRICK" as facing material.

PITTSBURGH TESTING LABORATORY

PITTSBURGH, PA.

April 13, 1948

REPORT
TESTS OF "CHEM" BRICK
MANUFACTURED BY
DETROIT BRICK & BLOCK CO.

COMPRESSION
(4 Brick Crushed Flat-wise)

NO. OF SAMPLES	LBS. PER SQ. INCH
5	Average 4,810

MODULUS OF RUPTURE

NO. OF SAMPLES	TOT. LOAD LBS TO BR.
5	Average 975

ABSORPTION
(24 Hour Immersion — 4 Brick)

NO. OF SAMPLES	PERCENT ABSORPTION
5	Average 11.4

All samples submitted by Detroit Brick & Block Co.

PITTSBURGH TESTING LABORATORY

MANAGER DETROIT DISTRICT

April 8, 1949

REPORT - FREEZING & THAWING

METHOD OF TEST - A.S.T.M. Designation: C7-44 covering Standard Methods of Sampling & Testing Brick for a total of 51 cycles.

CONCLUSIONS - Test indicated compliance with specification requirements for freezing and thawing test.

Respectfully submitted,
PITTSBURGH TESTING LABORATORY

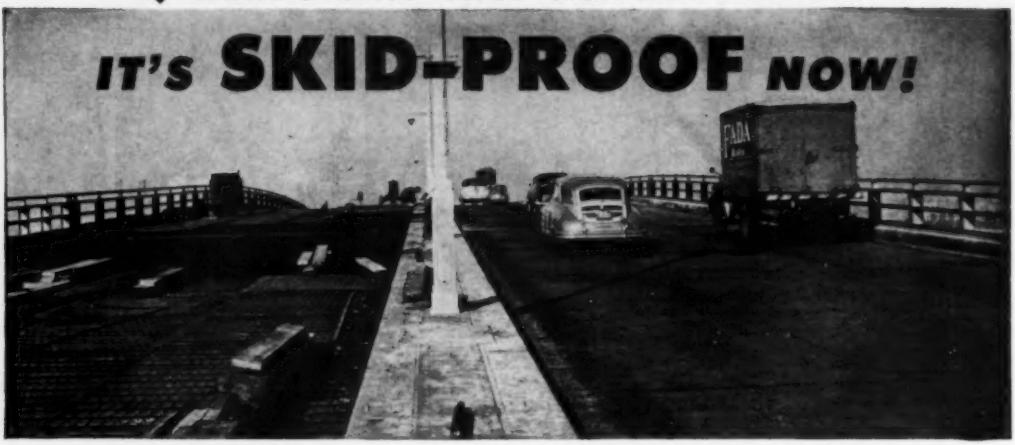
Frank Lok
Cement & Concrete Section

Typical new home construction using "CHEM BRICK" as face brick. Detroit, Michigan

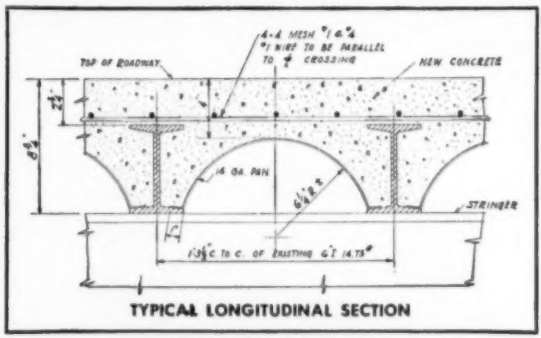
JACKSON & CHURCH COMPANY
SAGINAW, MICHIGAN
"WORK WELL DONE SINCE 1885"

HERE'S WHY THEY ASK FOR 'INCOR'

IT'S SKID-PROOF NOW!



'INCOR' CONCRETE REPLACES GRID BRIDGE-DECK ON LONG ISLAND CITY APPROACH TO NEW YORK'S QUEENS-MIDTOWN TUNNEL



TYPICAL LONGITUDINAL SECTION

MIDTOWN Elevated Express Highway carries 11-million vehicles a year to and from Queens-Midtown Tunnel. Where this Highway crosses high above Dutch Kills, the steel-grid bridge-deck was hazardous when wet or icy—sand and salts fell through. For safety's sake, the City's DEPARTMENT OF PUBLIC WORKS decided to rebuild the deck with concrete.

EDGECLIFF CONSTRUCTION CORP., of Long Island City, rebuilt a lane at a time, to minimize motorists' inconvenience. Removing the grid sections, total 32 ft. by 1040 ft., required cutting 56,000 welds. Grids were lifted by crane, then permanent metal-pan forms were inserted between transverse I-beams, and mesh-reinforcing and concrete placed.

For durability and wear-resistance, and because much of the work was done in cold weather, 'INCOR'* AIR-ENTRAINING 24-HOUR CEMENT was used throughout. Gaining service strength in a fraction of the usual time, 'Incor' minimized freezing risk in this highly exposed location, where heat protection was out of the question.

Motorists were quick to notice the sure-grip of concrete under wheel. Further proof of the axiom that traffic safety *begins* with the pavement!

Reg. U. S. Pat. Off.

MIDTOWN HIGHWAY CROSSING—QUEENS COUNTY, NEW YORK CITY

Bridge paving rebuilt under supervison of:
DEPARTMENT OF PUBLIC WORKS, CITY OF NEW YORK

Consulting Engineers: **HARDESTY & HANOVER,** New York

Ready-Mix 'Incor' Air-Entraining Concrete:
TRANSIT-MIX CONCRETE CORPORATION, New York

Contractor: **EDGECLIFF CONSTRUCTION CORP.,** Long Island City

LONE STAR PORTLAND CEMENT
'INCOR' HIGH EARLY STRENGTH PORTLAND CEMENT
LONE STAR AIR ENTRAINING PORTLAND CEMENT
LONE STAR MASONRY CEMENT

LONE STAR CEMENTS COVER THE ENTIRE CONSTRUCTION FIELD

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LONE STAR CEMENT, WITH ITS SUBSIDIARIES, IS ONE OF THE WORLD'S LARGEST CEMENT PRODUCERS. 15 MODERN MILLS, 27,500,000 BARRELS ANNUAL CAPACITY

NEWS OF CONCRETE MANUFACTURERS

Concrete Products Men Of Washington Discuss Problems, See Films

The annual winter meeting of the Concrete Products Association of Washington was held on December 10 in the quarters of the Associated General Contractors in Seattle.

A. B. Metcalf (Columbia Concrete Pipe Co., Wenatchee, Wash.) president, acted as chairman. After the business session and a general discussion on current problems of the concrete-block and concrete-pipe industries, two films were shown. One of these, sponsored by the Materials Handling Company, Seattle, covered mechanized handling; the other depicted the new Martin packerhead pipe machine and was shown under the auspices of the distributor, Concrete Machine & Equipt. Company of Portland.

Luncheon was served at the Engineers Club of Seattle and in the evening a "no-host" cocktail hour and dinner was held at the New Washington Hotel. The dinner was in honor of W. A. Bugge, director of highways for the state of Washington.

Industry Mourns Passing Of Two Prominent Members

The concrete pipe industry has recently lost two valued members — Dean Anson Marston and Fred L. Mays, both of whom died in October. Mr. Marston, the only honorary member of the American Concrete Pipe Association, passed away on October 21 at the age of 85 years of injuries received in an automobile accident. He was driving to Ames, Ia., from the farm on which he was born, near Rockford, Ill.

Mr. Mays, an officer of the Carolina Concrete Pipe Company, Columbia, S. C., died on October 13. Mr. Mays had many interests and honors in the civic life of his community, as well as in the concrete pipe industry of the Southeast. He was for many years mayor of Columbia.

F. M. Cook Joins Personnel Of Gene Olsen Corporation

The Gene Olsen Corporation of Adrian, Mich., has announced the association of F. M. Cook with their company.

Mr. Cook recently resigned his position as vice-president of The Stearns Manufacturing Company, Inc. In 1941 "Cookie" started with Stearns as purchasing agent and in 1943 he was made assistant sales manager. He was promoted to vice-president and sales manager in September, 1948.

Along with his experience in the production and sale of concrete block machinery, Mr. Cook acquired a first-hand knowledge of the problems involved in

F. M. Cook

the manufacture of concrete masonry units during two years when he owned and operated a block plant in northern Ohio.

Coming Events

January 15-19, 1950 — Chicago. 31st annual meeting, Associated Equipment Distributors, Stevens Hotel.

January 19, 20, 1950—Milwaukee. 30th annual convention, Wisconsin Concrete Products Association, Plankinton Hotel.

January 23-27, 1950 — Chicago. 20th annual convention and exhibit, National Ready Mixed Concrete Association, Stevens Hotel.

February 6-9, 1950 — Chicago. 30th annual meeting, National Concrete Masonry Association, Hotel Sherman.

February 22-25, 1950—San Francisco. 42nd annual convention, American Concrete Pipe Association, Hotel Fairmont.

Latest Precast Methods Initiated in Apartments For Cairo Housing Project

First application of precast concrete units for structures of multi-story residences has been begun in Heliopolis, a suburb of Cairo, Egypt, according to word from Karl P. Billner, president of Billner Vacuum Concrete, S. A., Philadelphia, Pa.

Mr. Billner stated that his firm is directing the construction of 80 four-story apartment houses of prefabricated concrete in Heliopolis. "We are carrying the use of concrete elements in housing a few steps farther in Egypt than has been done as yet in the United States, or anywhere else," he declared. He added that the structures, built to sell at an average cost of $3,300 per apartment, will be completed in two months.

Concrete slabs will be used in the same manner as structural steel in other buildings. Columns will be precast, as will be the beams, girders, floors and roofs. The buildings will then be assembled in much the same manner as a steel frame structure. The use of these methods effects a considerable saving of time, labor and money. The Egyptian government and two local concerns are cooperating in the housing project, designed to relieve an acute housing shortage.

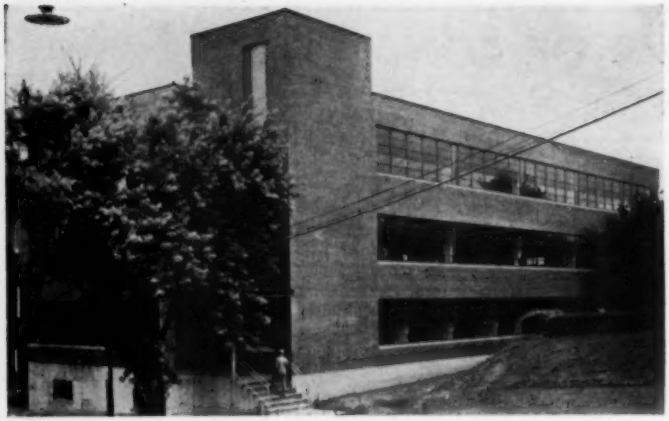
Mr. Billner has also announced the conclusion of an agreement with the French governmental agency, Electricite du France, for precasting 6,000,000 square feet of lining for a 20-mile canal which forms a part of a power development in the Rhone Valley.

Dunn Bros. Launch Expansion With $25,000 Ready-Mix Plant

Dunn Brothers of Pinckneyville, Ill., have announced plans to expand their business by erecting a $25,000 ready-mixed concrete plant at St. John, north of Pinckneyville.

Work on the new facilities is in progress, and 100-ton bins and two mixer trucks have already been purchased. Proprietors of the business are Ralph, Marion, and James Dunn, who have operated a concrete and block plant at Pinckneyville for the last seven years.

Frank Lewis Klingensmith, 70, president of the American Hume Concrete Pipe Company of Detroit, Mich., died recently at his home in that city. Mr. Klingensmith was formerly a vice-president, general manager and a director of the Ford Motor Company.



• The Blaw-Knox Company's new administration building at Blawknox, Pa.

Blaw-Knox Co. Completes Modern Office Structure

A part of the recent modernization of the Blaw-Knox Company has been the construction of a $500,000 administration building for its largest manufacturing division, located at Blawnox, Pa. Approximately 1,500 people are employed by this division.

The recently completed building provides needed office quarters for engineering and executive personnel. The open design of modern architecture has been used, with sweeping glass areas on all sides and glass block in the stairwells. The structural frame of the building is composed of Cemenstone, a precast concrete.

The upper three floors are used for office space and drafting rooms, and the concreted basement has a print shop and conference rooms.

Lite Crete Products Opens Roof Tile and Siding Plant

Lite Crete Products, Inc., has been organized at Tulsa, Okla., for the production of lightweight concrete building materials in a new plant at North 36th and Toledo avenues.

Products of the plant are large wall panels for siding and concrete roof tile. The wall panels are produced from a mixture of perlite, Celocrete and cement. Ovid N. Birmingham of Tulsa is head of the company.

Universal Concrete Pipe Co. Presents Its "Miss Editor"

Margaret Puchir of Midland, Pa., has been named editor of two house organs published by the Universal Concrete Pipe Company of Columbus, O.

Pipe Dreams, the external house organ, has a circulation of 15,000 and is distributed throughout this country and Canada. *The Circle* is a publication for employees in Universal's 15 plants.

Miss Puchir, who holds a bachelor of science degree in Journalism from Ohio State University, formerly was assistant editor of the *Ohio Engineer*. She also handled publicity for the Ohio Society of Professional Engineers in Columbus.

Eugene H. Morison has been named Eastern Division manager of Lowebco, Inc., Chicago manufacturers of "Oncrete for Concrete" and "Stromax".

John Tucker Jr., Chief Of Standards Bureau Concrete Section, Dies

John Tucker Jr., who had headed the concreting materials section of the Bureau of Standards mineral products division for the last 23 years, died in a Washington hospital on November 20.

Mr. Tucker joined the Bureau of Standards staff at Pittsburgh in 1916. After his return from service in the armed forces during World War I, he was an instructor at the Carnegie Institute of Technology. He became associated with the Bureau at Washington in 1926.

For his paper on new developments in concrete he was given the Sanford E. Thompson Award of the American Society for Testing Materials. He was a member of the Washington Academy of Sciences and the American Concrete Institute. Mr. Tucker was 59 years of age.

JOHN S. CHASE, president of the Chase Building Products Company, Dallas and Fort Worth, has been named a director of the Texas Concrete Masonry Assn.

California Concrete Pipe Makers Hear Test Results at Fall Meeting

Fifty-one concrete-pipe manufacturers and 36 affiliates and guests were registered for the fall meeting of the California Associated Concrete Pipe Manufacturers, held October 20 and 21 at the Hotel Barbara in Santa Barbara, Calif. Among those attending were J. A. Dunn of Swampscott, Mass., and Howard F. Peckworth, Chicago, president and managing director, respectively, of the American Concrete Pipe Association.

Following financial and membership reports on the first day's session on Thursday, October 20, an open discussion was conducted with regard to the possibility of changes and revisions in A.S.T.M. specifications. It was pointed out that as a result of recent developments and research numerous changes are imperative, particularly with regard to the uniformity of the general phraseology of pipe specifications.

The afternoon session on Thursday was taken up with talks by A.C.P.A. President Dunn and Managing Director Peckworth. Mr. Peckworth also showed a colored motion picture depicting the flow of water in concrete pipe *vs.* corrugated metal culverts. The scenes were from the actual procedure being followed at St. Anthony Falls, Minn., where the national organization is sponsoring a comparative test project in cooperation with the University of Minnesota. The data, showing extremely favorable evidence for concrete pipe against the corrugated-metal variety, is shortly to be made available to members, it was reported.

On Friday morning, October 21, a preliminary report by the Bureau of Reclamation on the Fresno tests on 20-in. irrigation pipe was read and pictures were displayed showing the test procedure. Howard G. Curtis of the Bureau's Denver headquarters pointed out that no conclusive evidence is yet ready for revelation, as test figures are still being analyzed and further experiments are being carried out in the Denver laboratories. He predicted, however, that much information of a worthwhile nature will eventually be released.

A. F. Pillsbury, associate professor of irrigation, University of California (Los Angeles), commented on tests he had made with small-diameter irrigation pipe. C. M. Howard of Seattle, engineer for the Concrete Products Association of Washington, announced that the final report of Washington State College on its test program is shortly to be made available.

The closing session on Friday afternoon was devoted to a discussion of the current activities of competing pipe industries, and those attending were strongly urged to use aggressive promotion and salesmanship.

It was tentatively decided that the annual meeting of the California association, usually held each winter at Fresno, would take place in San Francisco on February 22, 1950, immediately preceding the annual convention of the American Concrete Pipe Association on February 22, 23 and 24 at the Fairmont Hotel.

S. E. Concrete Pipe Assn. Holds Annual Meeting At Montgomery, Ala.

Approximately 100 members of the Southeastern Concrete Pipe Association met at Montgomery, Ala., for their annual two-day convention on November 3 and 4.

Addresses were delivered by the following: Ward McFarland, director of the Alabama Highway Department; J. L. Land, engineer, materials and tests, Alabama Highway Department; Howard F. Peckworth, managing director, American Concrete Pipe Association. Represented in the organization are Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee and Kentucky.

Besser Mfg. Co. Steps Up Consumer Advertising Helps

Jesse H. Besser, president, Besser Manufacturing Co., Alpena, Mich., has named Jonathan John Buzzell as publicity counsel, to devote his entire efforts to the further advancement of the Besser Cooperative Advertising Service and other publicity work in promoting still greater public acceptance and use of "Vibrapac" concrete block.

Mr. Buzzell took a leading part in planning and creating the Besser Cooperative Advertising Service, which was launched three years ago and which has been used successfully by a large majority of Vibrapac operators the country over. He has had long experience in advertising with General Motors and other industrial concerns as advertising manager. He was the author of one of the early books on sales letter writing which gained international distribution. He began handling the Besser advertising from his advertising agency in Detroit in 1929. Since 1938 he has been advertising manager at the Besser offices in Alpena.

Duane D. Bryan, who has been associate advertising manager for two and a half years, becomes the new advertising manager. Mr. Bryan has become well known and well liked in the industry for his excellent service in consumer advertising promotion. In addition to handling the general advertising, Mr. Bryan will continue his work in servicing Vibrapac operators with Cooperative Advertising materials and in personal contacts as in the past.

L. G. Switzer Named President Of S. California C.M. Assn.

L. Glenn Switzer of the Transit Mixed Concrete Co., Pasadena, was elected president of the Concrete Masonry Manufacturers' Association of Southern California at the annual meeting of the group held recently in Los Angeles.

Other officers chosen were the following: David W. Eccles (O'Kelley-Eccles Company, Monrovia), vice-president; and Homer C. Shirley (Superior Concrete Block & Builders' Supply Company, Temple City), secretary-treasurer. Directors include these officers and E. P. Ripley (General Concrete Products Company, Van Nuys); J. A. Allen (Hollostone Company, North Hollywood); Charles Wailes Jr. (Wailes-Bageman, Inc., Los Angeles); Bruce Iliff (Pre-Cast Concrete Products Company, Long Beach); Kenneth Frederick (Frederick's Cement Block & Supply Company, Culver City); and Merrill E. Dastrup (Upland Concrete Products Company, Upland). Clif Hendrickson continues as secretary-manager of the organization, with headquarters at 3160 West 6th Street, Los Angeles.

The officers and directors were installed at the December 17 meeting, the association's annual "ladies' night".

• Forms for the big concrete air ducts made for the U.N. building.

Universal Concrete Pipe Co. Makes Ducts for U.N. Bldg.

Concrete pipe air ducts at the new United Nations headquarters in New York City were "tailor made". Because the 5-diameter pipe required unique proportions and bends, metal forms had to be made from original specifications.

Engineers awarded the pipe-making assignment to the Universal Concrete Pipe Company, and its plant at Kenvil, N. J. In turn, Universal called upon a subsidiary, Federal Steel Fabricators of Columbus, O., to make the huge two-piece metal molds for the big curved elbow sections.

Two forms were manufactured at Columbus, loaded on flat-top trucks, and taken to Kenvil, where the concrete pipe was made.

Universal, at the New Jersey plant, manufactured about 50 of the curved sections for U. N. construction. Shown in the accompanying illustration is a truck loaded with the separate form sections, ready to leave for Kenvil.

Reports, Addresses Heard At A.C.I. Regional Meeting

At the New England regional meeting of the American Concrete Institute on November 10 and 11 at the Hotel Kenmore, Boston, Donald Cope McKay, professor of history at Harvard University, and C. H. Scholer, head of the department of applied mechanics at Kansas State College, were two of the principal speakers.

Prof. McKay spoke on the subject, *France Turns the Corner*, and Prof. Scholer reported on the rapidly expanding markets for and uses of concrete and also on the technical advances being made.

Other highlights of the program included a report on the huge reinforced concrete hangar completed last summer at Limestone, Me., for the U. S. Air Force. This and a similar concrete hangar erected simultaneously at Rapid City, S. D., are said to be the largest of this type ever constructed in the United States.

A. L. Malcolm, assistant engineer, and R. B. Young, assistant director of research, both from the Hydro-Electric Power Commission of Toronto, Ontario, reported on the highly successful concreting of the Ottawa Valley Project in Ontario.

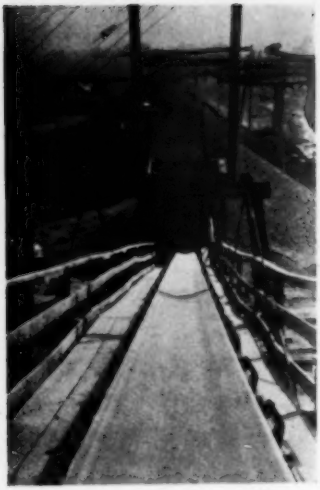
Dallas Dunbrik Mfg. Co. To Make Face, Backup Units

Recently announced at Dallas, Tex., was the formation of the Dallas Dunbrik Manufacturing Corporation, which will produce low-cost colored face brick. Officers of the concern include the following: George A. Jackson, president; A. W. Skelton, vice-president; and North Bigbee, secretary-treasurer.

In addition to water-repellent, colored Dunbrik the company will produce Dunstone, a larger unit for backup walls. The plant, showrooms, and offices have been secured, according to a local press announcement.

Correction

In an article on *Manufacture of Concrete Poles in France by Centrifugal Spinning* published in the September, 1949, issue of the CONCRETE MANUFACTURER it was stated on page 181 that: "A typical mix to make one cubic yard of concrete would consist of the following: 22 cu. ft. of gravel, graded ½ in. down, 11 cu. ft. of sand, and 140 lbs. of cement, giving a 1:1:2 mix by volume." The amount of cement was obviously far too low. Later information is that the materials used for one cubic yard of concrete are: 673 lbs. of cement, 1080 lbs. of sand (¼-in. to dust), and 1942 lbs. of gravel (⅜- to ¼-in.). This allows for about 4½ Imperial (or 5¼ U. S.) gallons of water per sack of cement.



• Operating in the concrete batch plant of the Fenton Materials Co., San Diego, California, the conveyor belt shown above has handled more than 2,500,000 tons of sand and gravel without any repair since it was installed in 1941, according to The B. F. Goodrich Company, manufacturer of the belt. The belt runs at speed of 400 f.p.m. on 500-ft. centers, is 30 in. wide, of five-ply construction and normally carries 800 tons during an eight-hour day. On one record working day of 10 hours, however, it hauled 2800 tons.

N. C. Concrete Masonry Men Enjoy Film and Discussions

On November 9 the North Carolina Concrete Masonry Association held its fall meeting at Salisbury, N. C. Host for the meeting was the Johnson Concrete Company of Salisbury. J. F. Canady, president of the association, was in charge of the sessions.

After a presentation of the Portland Cement Association's film *The Drama of Portland Cement*, members participated in a discussion on lightweight aggregates.

Illinois Ready-Mix Concern Expands to Fill Big Order

Two cement storage tanks, one of 200-bbl. and the second of 400-bbl. capacity, have been installed at the plant of the Ready-Mix Concrete Company of Lawrenceville, Ill., according to W. P. Moutz, proprietor. The management has also built a supplemental plant adjacent to the original facilities, in order to speed delivery of ready-mix to the site of construction at The Texas Company's plant.

United Concrete Pipe Co. Given Kern County, Calif., Contract

The United Concrete Pipe Co., Baldwin Park, Calif., was low bidder for construction of the first water distribution system for the U. S. Bureau of Reclamation in Kern County, Calif., on its bid of $848,669. The next low bid was submitted by the Concrete Conduit Co., Colton, Calif., whose figure was $904,338. There was spirited bidding for the job of casting the concrete pipe and the laying of the lines, a total of 13 bids having been received.

The project is the first of several separate contracts to be awarded for the distribution of irrigation water from the Friant Kern Canal of the Central Valley Project.

Wilhelm New Division Head For Universal Concrete Pipe

Appointment of C. Ray Wilhelm as southeastern division manager for the Universal Concrete Pipe Company has been announced by H. X. Eschenbrenner, president.

Mr. Wilhelm is in charge of Universal's operations in Georgia, Tennessee, Alabama and Florida. He is making his headquarters in Atlanta.

The new division manager formerly was a machine shop superintendent and was also in charge of machinery production and sales for Universal.

Cincinnati Firm's Output Handled by New Organization

A newly-formed Cincinnati concern, the Products Distributing Co., will be associated with Reading Concrete Products, Inc., 1773 Reading Road. It will be a separate firm, however, incorporated to distribute the output of the manufacturing company.

Members of the new organization include the following: Richard Francis, president; H. H. Rinehart, vice-president; and J. F. Roettele, secretary-treasurer.

• Setting a 1400-lb. concrete septic tank is a one-man job for Ed Apsden of Erie, Pa., who has devised a special rig on his Willys 4-wheel-drive pickup truck. A channel iron frame rises 7 ft. above the pick-up body and is fitted into the stake pockets of the truck. To accommodate a 4-wheel dolly and half-ton capacity chain fall, a 10 ft. monorail is suspended from the center of the frame, extending four feet beyond the truck body. Two steel pipe telescoping legs are used to brace the projection during loading and unloading.

Maule Industries of Miami Installs Wet Mix Plant In Expansion Move

New equipment recently installed by the Maule Industries, Miami, Fla., reported to be one of the largest producers of ready-mixed concrete in the Southeast, includes the following machinery:

An Erie wet mix plant, which consists of a 160-cu. yd. three-compartment aggregate bin, a 492-bbl. cement bin, a 3-cu. yd. AggreMeter, and a 36-cu. ft. Cemeter charging a 3-cu. yd. Smith tilting mixer; an Erie 50-t.p.h. vertical bulk cement elevator and an under-track screw; and an Atlas belt conveyor for aggregate.

Pumice Block Plant Supplies Units for Bremerton Area

At Bremerton, Wash., a thriving industry has been developed by J. R. Payne and his crew at the Standard Concrete Company plant, where building units of various shapes, colors, and sizes are produced from pumice. The volcanic material is shipped to Bremerton from Bend, Ore.

At the plant coloring matter, water, and cement are added to make the popular lightweight units, which are stacked for curing in "house" lots. Cost of block for the average home is estimated at approximately $600. Frank Whittaker is manager of the plant. Standard block has been used for many homes in Bremerton and throughout the Olympic peninsula.

New Volcanic Cinder Block Added in Plant Expansion

The Angelus Concrete Block Co. of Burbank, Calif., has branched into the lightweight field with a volcanic cinder block marketed under the trade name of Cinderlite.

The Angelus Concrete Block Co. is presently in the process of expansion, having recently acquired adjoining property for use as additional storage space. Heavy demand for the company's products has justified the installation of a second Besser Vibrapac machine in addition to the one already in operation. This will more than double the plant capacity.

E. J. Uffelman, president of the Chester Concrete Company, Inc., Chester, Ill., has announced the opening of the firm's new ready-mixed concrete plant at Sparta, Ill. Associated with Mr. Uffelman in the business are Fred A. Ebert, vice-president, and Frank Ebert, secretary.

Dominion Building Materials, Ltd., of Montreal and Ottawa announces the purchase of Ready Mix Concrete, Ltd., of Montreal and Ontario Ready Mix Concrete, Ltd., of Ottawa. Business will be carried on at the same locations under the name of Dominion Building Materials, Ltd.

Ready Mixed Concrete in 1949

Industry Markets 27,000,000 Cu. Yds. to Set New All-Time Record—8½ Percent Increase

By WILLIAM M. AVERY

THE 1949 output of ready-mixed concrete in the United States totaled close to 27,100,000 cu. yds., with an estimated delivered value of $310,000,000, according to data compiled from questionnaires sent to THE CONCRETE MANUFACTURER by producers in the closing weeks of the year. The production figure represents a new peak for the industry, being approximately 8½ percent higher than the previous record of 25,000,000 cu. yds. achieved in 1948. It marked, however, a definite leveling off in the rate of gain that has been maintained since the conclusion of World War II, and strongly suggested that the period of rapid expansion has about run its course.

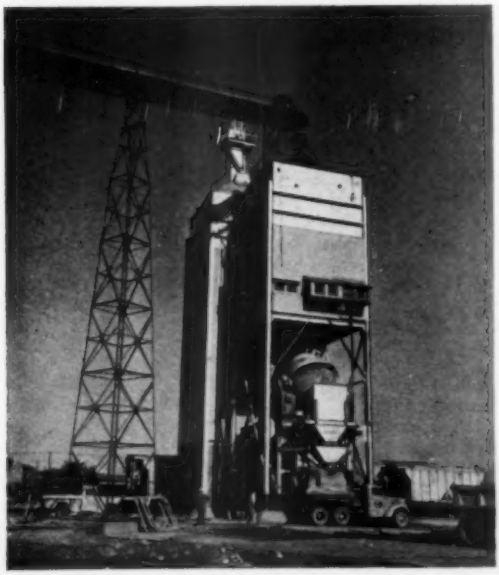
The total production for 1949 indicated by the survey data is confirmed in a general sort of way by advance estimates of portland cement shipments during the year. Approximately 212,000,000 bbls. of cement was shipped in 1949, a gain of about 4 percent over 1948. Assuming 5 sacks per cu. yd. of concrete, the ready-mix industry used about 33,800,000 bbls. of cement during the year, or roughly 16 percent of all portland cement shipped. This figure compares favorably with percentages based on the industry's estimated output for every year since 1942, when the proportion was 16.2 percent. The percentage dropped in the intervening years due to the tremendous increase in the production of concrete masonry units. Actually, ready-mix has accounted, year after year, for an increasingly large proportion of all monolithic concrete.

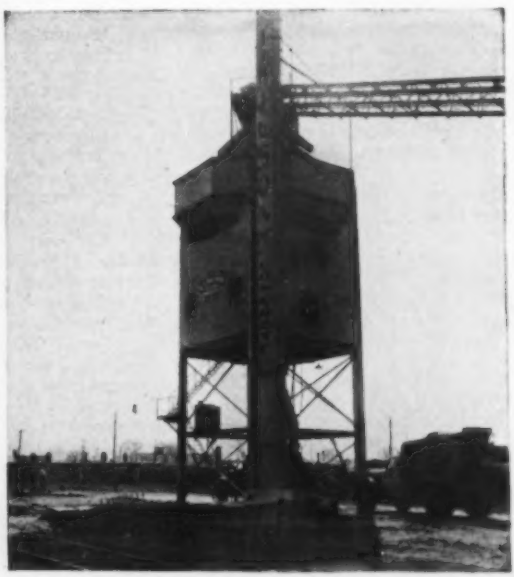
Production Distribution The survey returns show that most of the increased production in 1949 came from the area west of the Mississippi River, where the average output of all producers who supplied figures jumped approximately 25 percent. Since a relatively large part of the total gain came from just a few producers, it seems possible that the computed average is somewhat too high, and that the true gain may have been in the range of 15 to 20 percent. In the South and the Midwest 1949 production was almost exactly on a par with 1948, while in the East there was a moderate gain of approximately 3 percent.

Selling Price The average delivered selling price of ready-mixed concrete increased about 5 cents per cu. yd. during 1949—from $11.49 per cu. yd. on January 1 to $11.54 per cu. yd. on November 1. This slight increase (about ½ of 1 percent) probably reflects a final adjustment of prices resulting from the jump in cement costs after the 1948 Supreme Court decision on the basing point question. Over half of the companies that submitted information showed overall cost increases ranging from 5 to 10 percent. About 30 percent indicated no appreciable change in costs, and less than 20 percent some reduction.

The selling price of ready-mixed concrete remained unchanged or increased somewhat in all areas except the South, where the average dropped from $11.91 per cu. yd. on January 1 to $11.73 per cu. yd. on November 1. In the East the average increased from $10.88 to $10.97 per cu. yd., and in the Midwest from $10.90 to $11.13 per cu. yd. The average for producers in the West was unchanged at $12.38 per cu. yd.

• Two of the new plants which figured in 1949's record production of ready-mixed concrete are (left) the Camden Lime Company's excellent central-mixing plant at Camden, N. J., and (right) the fine dry-batching plant erected by the T. T. Wilson Company at Chattanooga, Tenn.





• Truck signs, such as those shown above, were used by a number of producers as aids in merchandising, a practice that could well be extended throughout the industry.

Wages Hourly wage rates in the industry increased about 4 cents—from $1.30 on January 1 to $1.34 on November 1. Eastern producers showed the highest increase, from $1.29 to $1.38 per hour. In the West the average hourly wage went from $1.52 to $1.56, in the Midwest from $1.32 to $1.35, and in the South from $0.97 to $0.98. All the returns showed rates appreciably higher than the recently enacted 75-cent minimum.

Truck Fleets The number of mixer trucks in the industry increased about 4 percent during the past year, and the average capacity per truck rose from 3.52 cu. yds. to 3.63 cu. yds. Approximately the same increases in fleet size and capacity were shown in all sections of the country. The companies covered in the survey showed an average of between 8 and 9 trucks per plant, compared with a showing of approximately 10 in a similar survey conducted late in 1948. The apparent drop in the number of units operated merely reflects the higher proportion of relatively small plants which replied to the questionnaire.

Outlook For 1950 In regard to the outlook for 1950, 38 percent of our informants said that they expect their output to increase somewhat. Their estimates varied over quite a wide range, but the average was around 7 percent. About 30 percent predicted a drop in production, in most cases without attempting to estimate the amount of the expected slump. The remaining 32 percent expect their 1950 volume to be approximately equal to 1949.

Plans for Expansion About 38 percent of the replies indicated plans for expanding capacity in 1950, and in all cases these were the same returns that anticipated an increase in demand. In most instances it was stated that the expansion would be brought about by the purchase of additional mixer trucks, or the replacement of existing small units by larger machines.

Cement Supply So far as can be determined there was relatively little lost production in 1949 due to cement shortages. This was a welcome change from the preceding year, when the average loss for the entire industry was about 6 percent, or roughly 1,500,000 cu. yds. Undoubtedly the improved situation resulted mainly from expansion and modernization programs launched during 1948 and brought to completion early in 1949 by many cement companies. Such programs very probably made available an additional 5,000,000 bbls. of cement. Another important factor was that many producers of ready-mixed concrete sought and obtained early in the year firm commitments for definite amounts of cement.

Material Service Possibly the outstanding news of the year in the ready-mix field was an item from Chicago, where the Material Service Corporation announced that it had entered into large-scale production of ready-mixed concrete. Plans call for a 4- to 5-million dollar investment at ten of the corporation's yards in the Chicago area. Each central mixing plant will have a capacity of 1,000 to 1,200 cu. yds. daily, and the network will be served by a fleet of 200 mixer trucks of 6-cu. yd. capacity. Production of plant-mixed concrete is expected to begin early this year, when three of the ten plants will go into operation. Some deliveries have already been made in the down town area of the city from a dry batching plant at one of the corporation's yards.

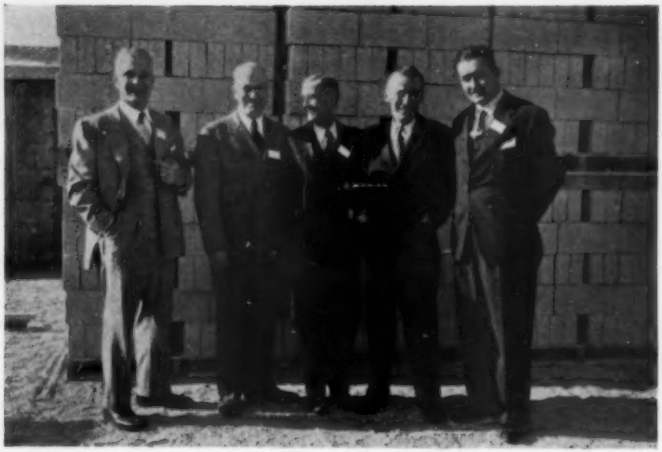
Central Mixing There was a fair amount of new plant building in 1949, and if there was such a thing as a trend in design, it was in the direction of central mixing. The use of non-agitating equipment made some gains during the year, but the industry and its customers continued to show some preference for the use of mixer trucks even in connection with central-mix plants.

Quality Control Throughout most of the industry there was greater awareness of the importance of quality, and this was broadly reflected in the new plants as well as in improvements made to existing plants. Discussions of quality control and merchandising were prominently featured at the industry's 19th annual convention in New York early in the year, and were certain to come up again at the meeting in Chicago January 23 to 27. Largely through the unifying and directive efforts of the National Ready Mixed Concrete Association, representing about 80 percent of total production, the industry is making steady progress toward the solution of many of its problems.

In the early weeks of 1950 the outlook for producers of ready-mixed concrete is definitely on the bright side. With construction activity almost certain to continue at, or only slightly under, the 1949 level, the industry will surely maintain the high level of production it has enjoyed for several years. Further gains must come largely through increased efforts in the field of merchandising, a job which many producers now regard as their principal objective.

Atlanta Meeting

Southeastern N.C.M.A. Members Discuss Merchandising, Floor Filler Systems and Other Timely Issues



• Photographed during the plant tour at the close of the Southeastern Regional meeting of N.C.M.A. are (left to right): H. E. Shaw, Atlanta Aggregate Co., Atlanta; Hardy Magrath, Lehigh Portland Cement Co., Birmingham; John S. Bailey, Concrete Manufacturing Co., Atlanta; George W. Katterjohn, Katterjohn Concrete Products Co., Paducah, Ky.; and Roy Darden, Roy Darden Industries, Atlanta.

another ON THE SPOT report

THE fifth Southeastern Regional meeting of the National Concrete Masonry Association was held at the Atlanta-Biltmore Hotel, Atlanta, Ga., on November 21 and 22. The two-day session, which attracted well over a hundred producers of masonry units and others associated with the industry, more than lived up to the high standards set by previous gatherings of this active regional group. Although the program covered a wide range of subjects, major emphasis was appropriately given to the problem of merchandising. After the formal sessions were concluded, many of the visitors joined in a bus tour of Atlanta plants.

• Here, seen at a cocktail party provided by the Atlanta hosts, are (left to right): E. S. Bennett, Johnston Concrete Products Co., Huntsville, Ala.; Harry Mitchell, P.C.A., Atlanta; W. E. Scott, General Portland Cement Co., Tampa, Fla.; R. C. Martin, Martin Concrete Products Co., Sarasota, Fla.; John A. Ruhling, P.C.A., Chicago; and James G. Stokes, P.C.A., Atlanta.

By WILLIAM M. AVERY

The opening session was presided over by George W. Katterjohn, past president and currently a director of N.C.M.A. Mr. Katterjohn recalled that the idea of holding annual Southeastern regional meetings was conceived when national officers of the association met at Atlanta almost eight years ago. Because of travel restrictions then in effect it was decided to hold regional gatherings all over the country.

Business Conditions John Bailey, president of the Concrete Manufacturing Company of Atlanta, extended a warm welcome to the group, and introduced the Atlanta hosts, including H. E. Shaw of the Atlanta Aggregate Company, who then conducted an open discussion of current business conditions in the Southeastern states. Producers from various cities in the Southeast reported on general trends in their immediate markets and on the outlook for 1950. From the statements presented it appeared that 1949 had been a good year for the industry, despite a rather slow start, and there were a number of expressions of confidence in the prospects for 1950. Several references were made to increased demands for credit, and to keener competition, particularly on price, from manufacturers of clay brick.

Costs and Credits Trends in costs and credits were discussed by R. E. Champion, formerly credit manager for the At-

• Ernest Black, Black-Brollier, Inc., Houston, Tex.; William P. Markert, N.C.M.A., Chicago; and Sidney P. Newell, Newell Concrete Block Co., Orlando, Fla.

• A. J. Clark, Builders Supply, Inc., Pharr, Tex.; John S. Chase, Chase Building Products Co., Dallas, Tex.; and Cedric Willson, The Herculite Corp., Rosenberg, Tex.

lanta Aggregate Co. Prices, according to this speaker, have become well stabilized in the past year, with almost no change noted in the past few months. He predicted, however, that there will be some increases in block manufacturing costs as a result of the recently enacted 75-cent minimum wage, since some rates for unskilled workers in the industry are less than the new minimum. He also pointed out that other workers will probably demand the re-establishment of the differential which they held under the old 40-cent minimum.

Mr. Champion urged his listeners to adopt sound credit practices in recognition of the fact that money is no longer as plentiful as in the years immediately following the war. He suggested that companies which can afford to do so should employ competent credit men to look after this important aspect of their business, since the job requires special knowledge and the closest attention.

Merchandising The session on merchandising was presided over by M. E. Rinker, Rinker Material Corporation, West Palm Beach, Fla. In introducing the subject, Mr. Rinker expressed the opinion that one of the industry's major problems is still to combat public ignorance. He feels that something is seriously lacking in the masonry unit industry's marketing and publicity methods. There is no longer, he said, the slightest reason why a home builder should be regarded as a hero because he uses concrete masonry units, but the notion still persists in many areas.

John A. Ruhling, manager of technical personnel training for the Portland Cement Association, gave an able and lucid presentation of a broad merchandising plan based upon methods currently in use among progressive masonry unit producers. In introducing his subject Mr. Ruhling stated that the plan is simply a collection of selling ideas used successfully by block manufacturers all over the country. He said that the block industry has made wide use of all the media which other industries have used to gain public acceptance of their products.

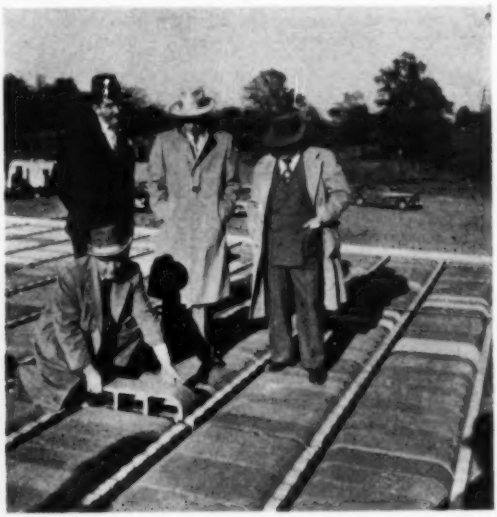
By means of slides and his own running commentary Mr. Ruhling then proceeded to show how a competent concrete masonry salesman goes about his job. He analyzed the three principal markets — housing, farm and commercial—and listed the various people who comprise or influence each.

Mr. Ruhling discussed briefly the Portland Cement Association's extensive advertising program in 38 trade and consumer publications having a total circulation of over 17,000,000, The advertisements stress such features of concrete masonry construction as fire and storm safety, low maintenance costs, and comfort, directing prospective home builders to local block producers for additional information.

• Paul Pierce, Universal Atlas Cement Co., Columbus, Ga.; Otis H. Manchester, Jr., Fleming Manufacturing Co., St. Louis; and Roy Millhouse, Universal Atlas Cement Co., Birmingham.

According to the speaker, many producers supplement this effort with quite extensive programs of their own, designed to familiarize the public with their names and products. In discussing the features of such programs Mr. Ruhling referred to a "concrete masonry advertising kit" soon to be offered by P.C.A. which will enable block producers to create their own advertisements. It will include cuts, slogans, captions and copy suggestions for one- and two-column advertisements.

Personal selling, Mr. Ruhling



• We snapped this picture during the inspection of an F & A roof under construction at the Sherman Concrete Pipe Company's plant. Left to right: Roy Darden, A. J. Clark, and J. L. Hart. Holding the soffit unit is Harold Shuptrine of Builders Concrete Products Co., Atlanta.

• Among the ladies whose presence brightened the Atlanta meeting were Mrs. H. E. Shaw (left) and Mrs. H. J. McDargh. Mr. Shaw (left) represented one of the host organizations, the Atlanta Aggregate Co. Mr. McDargh is manager of the Southeastern Region for the Portland Cement Assn.

said, is the key to securing and maintaining a steady volume of business. It should include regular calls on builders, financing agencies, school boards, and on jobs in progress. If it is impossible to get out to see such people, they should at least be contacted periodically by telephone.

Other selling aids which Mr. Ruhling mentioned included holding plant open house, incorporating the product attractively in plant buildings and offices, encouraging salesmindedness among truck drivers, the use of model houses and demonstration homes, and regular mailings of sales letters and promotional literature to an active, up-to-date prospect list.

At the conclusion of Mr. Ruhling's talk, William P. Markert, promotion and publicity director for N.C.M.A., spoke briefly about some of the problems which have engaged his attention since he joined the association staff. He mentioned the N.C.M.A. *Reporter* which has been published monthly since May, 1949, and the first of what will probably become a series of association publications showing the use of concrete masonry units in buildings of various types. The first effort along this line is entitled *Concrete Masonry in Church Construction,* and according to Mr. Markert it has been received by the industry with gratifying enthusiasm. To date, he said, approximately 10,000 copies have been distributed to producers.

Concrete Masonry in School Construction, Mr. Markert said, would be ready for distribution late in 1949, and similar treatment of homes, hospitals and multiple-story structures is under consideration for 1950. In closing he urged members to pass on to him any ideas they have on how the association can improve and broaden its promotional work.

Ben G. Wallis, assistant sales director of the Florida Portland Cement Co., Tampa, told about his company's extensive program for selling concrete, rather than just portland cement. He showed a number of enlarged poster ads designed to accomplish this purpose, as well as cartoons, job signs, and truck signs which his company has successfully urged producers to employ.

Of particular interest was a series of advertisements keyed to the slogan "There must be a market for concrete before there can be a market for *your* concrete." These ads, as as well as others displayed by Mr. Wallis in the course of his talk, stressed such characteristics of concrete masonry construction as safety, economy, comfort, and immunity to termite invasion.

Column Blocks F. Paul Anderson, general superintendent of Maule Industries, Miami, Fla., described a special column block which his company developed

• Nelson Severinghouse, Consolidated Quarries Corp., Decatur, Ga., and George P. Grant, Pit and Quarry Publications, Chicago.

some months ago. He explained that building codes in the Maule marketing area require that walls be reinforced at corners and intermediate points to withstand the stresses created during hurricanes. The former practice was to have carpenters "form in" such columns during construction so that they could be poured. The column block, introduced by Maule in May, 1949, is simply a hollow piece of concrete masonry which serves as a form. It has lugs which serve to tie the columns into the adjoining walls. The residential unit has an area of 167½ sq. in., and there is a similar unit for commercial structures with a somewhat greater area. A special block with a weakened plane section is furnished with each column. This plane is knocked out after the wall is up, providing an opening through which the reinforcing steel in the column can be tied.

According to Mr. Anderson, the column block attracted favorable attention almost immediately. From May until August sales rose from 7,000 units to nearly 40,000 monthly, and current production is at the rate of about 50,000 units per month. Free standing columns made with the column blocks cost less than half as much as columns made with forms. The residential unit sells for 21 cents on the yard, and the commercial unit for 30 cents.

Floor Systems In introducing his subject, *Pre-Cast Floor Filler Block Systems,* R. E. Copeland, director of engineering for N.C.M.A., expressed the opinion that the potential market for concrete masonry in the floor and roof field is at least 500 million units per year, or 50 percent of the industry's present total production for all uses. This potential, Mr. Copeland said, can be realized in 10 to 15 years if the proper effort is put forth, and the industry needs the additional market to keep its plants in full production.

Mr. Copeland then described, using lantern slides, six of the more common systems now in use, pointing out that all six use concrete masonry units made on regular machines. The first type mentioned was that using regular filler blocks with cast-in-place joists and slabs—a system applicable to a wide range of spans and loads for buildings of almost all types of occupancy except warehouses and heavy manufacturing structures. This system, Mr. Copeland said, enables any concrete masonry unit producer to enter the floor filler field without acquiring special manufacturing facilities. Soffit units are used in this type of floor to give full masonry coverage of the ceiling surface.

Mr. Copeland briefly described each of five proprietary filler block floor systems, including under this heading the Acrow Telescopic Center, the Strestcrete, Dox Block and F & A systems and Joistile. The Telescopic Joist provides a convenient means of supporting filler block floors while joists and slabs are being poured. It eliminates costly shoring and leaves the area under the floor clear throughout the period of construction.

Both the Strestcrete and Dox systems involve prefabricating units of special design (but made on regular machines) into planks. In both systems the bearing edges are ground and the units are pulled together with steel bolts.

The F & A System and Joistile utilize precast inverted "T" beams to support filler units which have coped edges that rest on the flanges of the beams. "T" beam action is created when the slab is poured, since the concrete shrinks and grips the beams. The top edge of the F & A joists is serrated to assist bond with the slab. Both of these systems provide flat ceilings to which plaster or paint can be applied directly.

All of these systems, Mr. Cope-

(*Continued on page* 205)

Block Production in 1949

Industry Has Another Peak Year—Output Totals 1,200,000,000 Units

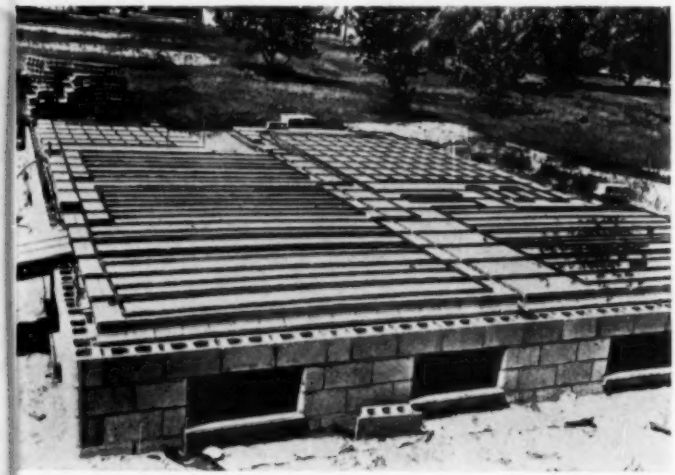
By WILLIAM M. AVERY

DESPITE a rather sharp curtailment of production in the early months of 1949, the output of concrete masonry units for the entire year amounted to approximately 1,200,000,000 8- by 8- by 16-in. equivalents, according to information gathered from an industry questionnaire sent out late in the year by THE CONCRETE MANUFACTURER This indicated a slight gain (about 4 percent) over the industry's 1948 output, which was the 1949 total, but none was quite so crucial as the fact that capacity operations in many plants continued right up to the end of the year. From all indications, it was output in November and December that counterbalanced the losses in the early spring of the year.

The survey showed a drop of ½ cent in the average selling price of concrete masonry units — from 19 cents per unit on January 1, 1949, to 18½ cents per unit on November 1. Based on the 18½-cent figure, the industry's 1949 output had a value of approximately $225,000,000, compared with $217,000,000 in 1948, when the average selling price increased from 17.7 cents on January 1 to 18.7 cents on November 15. Although the price drop in 1949 was relatively small (about 2½ percent), it was made in the teeth of an average wage increase of 4½ cents per hour—from $1.08 to $1.125 per hour.

One of the surprising facts revealed by THE CONCRETE MANUFACTURER'S survey was a 9 percent increase in the industry's hourly productive capacity. Some part of this increase was unquestionably accomplished by stepping up the speed of existing equipment, but a careful study of returns from individual companies indicates that installation of new equipment was an important factor in bringing about the overall increase. Although by and large there was little evidence to indicate that many plants closed their doors in 1949, it seems likely that some of the increased capacity was installed to take up the slack created by the relatively large number of business failures that occurred in 1948.

Returns from the questionnaire indicate a slight drop-off in production in both the East (down 2 per-



• Floor filler units played an important role in bolstering the block industry's production in 1949. Many producers supplied installations like the residential radiant heating job shown above.

determined from a similar questionnaire, but the conclusion was based on a somewhat smaller sample than was obtained a year ago, and there existed a correspondingly greater possibility of error. Since the increase shown in the 1949 survey was relatively small, it probably indicated that there was at least no appreciable drop in total production for the year.

Having due regard for the widespread alarm evident throughout the industry in the spring of the year, when inventories climbed in spite of curtailed production, the year's performance was astonishingly good. A scant six months ago many producers would gladly have settled for 75 or 80 percent of their 1948 gross. No doubt, a number of factors were responsible for pulling up

• One of the outstanding events of the year was the Concrete Industries Exposition held in conjunction with the N.C.M.A. convention at Cleveland in February. Some 70 equip-

• Throughout the industry there was greater effort put forth in merchandising during 1949. Truck signs and job signs like these were evidence of a new kind of thinking among producers.

cent) and the South (down about 4 percent). These minor losses were more than offset by gains of 7 percent in the West and 9 percent in the Midwest. Based on the 1947 distribution of production in the United States (Bureau of Census Report MC 32D), the 1949 output of concrete block was distributed approximately as follows: in the East, 299,000,000 units; in the Midwest, 406,000,000; in the South, 334,000,000; and in the West (including the West South Central states, the Mountain states, and the Pacific states), 161,000,000.

The information furnished by producers indicates that lightweight units accounted for approximately 47 percent of total production in 1949, or about 564,000,000 units. This was a slight increase over 1948, when about 46 percent of total production was in the lightweight category. In the New England and Middle Atlantic states lightweight units predominated in the ratio of about 2:1, but the proportion was almost exactly reversed in the Midwest.

Reductions in selling price were shown in all sections of the country, although many companies held their prices at the 1948 level. In the East the average selling price dropped from 17.1 cents per unit on January 1 to 16.4 cents on November 15. In the Midwest the average reduction was 0.4 cents—from 17.9 cents per unit to 17.5 cents. The West showed a reduction from 21.8 cents per unit to 21.5 cents, the high average in this case probably reflecting the higher prices paid for cement as a result of last year's Basing Point Decision.

The survey shows a fairly uniform pattern of wage increases throughout the industry. In the East the average hourly wage paid increased from $1.05 to $1.13, in the Midwest from $1.02 to $1.07, and in the West from $1.12 to $1.16. Returns from the South on both wages and selling price were too meagre to permit computing averages that would have any significance.

One of the questions asked in the survey had to do with loss of production due to shortages of aggregates or cement. Only a handful of producers reported any loss of production due to lack of materials, and their losses were inconsequential, and in most cases due to local strikes or other purely local causes. In this showing there was a clear indication that the acute cement shortages that developed in 1947 and 1948 were not repeated in the year just closed. This was fortunate, indeed, since most plants were running at full capacity during the Fall months, just when cement shortages usually hit. Returns from THE CONCRETE MANUFACTURER's 1948 survey questionnaire indicated that production in the block industry would have been at least 7 percent higher in that year if there had been an adequate supply of cement. An even more serious loss of output occurred in 1948 as a result of the widespread shortage of mortar

(*Continued on page* 208)

ment firms were represented in this biggest show in recent history, and attendance was well over 4,000.

Modernization Program Helps Carolina Pipe Meet Demand

another ON THE SPOT report

EVERY length of concrete pipe slated for sale to the highway department of South Carolina must be inspected and stamped by a state inspector. As this inspection takes place at the producing plant

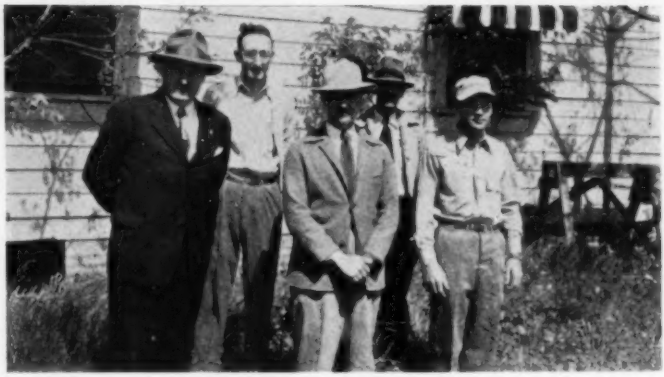
By EDWARD J. BRUNENKANT

it is, even if only by virtue of the time taken to make the inspection, an integral part of the production process. At the Columbia plant of the Carolina Concrete Pipe Company, where large quantities of pipe are produced for the state, inspection is made several times a week.

The state code provides that every piece of pipe purchased by the highway department must be rolled before an inspector and that at least one pipe section from each run be tested on a compression machine. This test is carried out by the three-edge method on a company-owned rig capable of exerting 19,000 lbs. gross load.

Although the expense of inspection and testing is partially borne by the individual companies, both sides seem well satisfied. The state likes it because the system practically insures its purchases against defective material, and the companies endorse the practice because it protects them against rejects in the field, stops unfair competition through the production of inferior units, and provides an effective on-the-spot check of their own production.

Keeping pace with the rising demand for concrete pipe in South Carolina, Concrete Pipe Company has executed a plant modernization program consistent with upping output of better pipe in a greater variety of sizes. Over a span of several years weigh batchers have replaced hand buggies, steam curing has been substituted for water, power loading has replaced manual, and a number of other minor improvements have been made in the production cycle. Other improvements such as switching from bagged to bulk cement will be introduced here in the near future.



• About 50 men are employed at the plant of the Carolina Concrete Pipe Company, Columbia, S. C. In this picture, snapped last summer were (left to right): the late Fred L. Mays, who was general manager; T. J. Fogel, office manager; W. W. Des Champs, superintendent; W. B. Liles, sales representative; and Karl S. Welden, plant foreman.

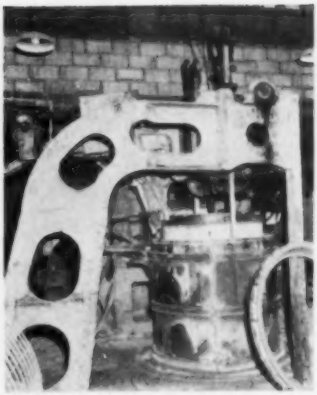
Sand and gravel are trucked in from local pit and stored in ground stockpiles near the plant building. A truck-mounted Michigan crane equipped with a ⅝-cu. yd. bucket moves the aggregates to a small dispensing bin. They are drawn off and proportioned by weight in a Winslow traveling weigh batcher suspended from two overhead rails and finally dumped into a 30-cu. ft. Besser mixer. Cement is added at the mixer from cloth bags. The mix ratio is 1:2:4.

• Rolling concrete pipe for the state inspector at the Columbia, S. C., plant of the Carolina Concrete Pipe Co.

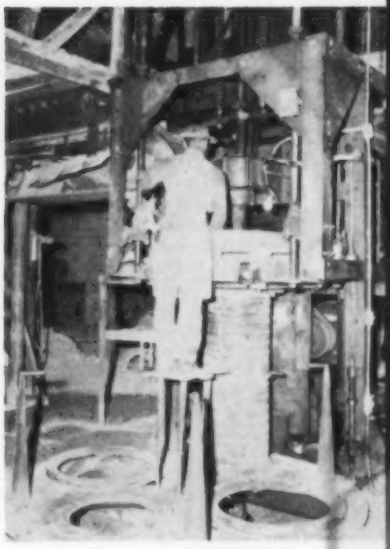
The concrete is elevated in a Besser skip hoist to the hopper of a McCracken Model T. concrete pipe machine. A similar machine is used in the company's Charlotte, N. C., plant. Other earlier models of McCracken pipe machinery have been used there since 1925. Pipe in sizes from 6-in. through 36-in. are made on this machine, which utilizes the packerhead method of forming the section. In an average 8-hour day, about 300 24-in. pipe, or the equivalent in other sizes, are produced with this equipment. The newly-formed pipe sections are removed from the machine with a rubber-tired cart and wheeled to the curing rooms, where the jackets are removed.

Larger concrete pipe in sizes

• Strength of the pipe is checked on this testing rig by the three-edge method. The machine is capable of exerting up to 19,000 lbs. gross load.



• The larger sizes of pipe are made on this machine. Compaction is effected through two hickory tampers synchronized with the revolving turntable.



• Pipe sizes from 6 to 36 in. are made on this machine. In an average day about 300 24-in. joints (or the equivalent in other sizes) are turned out.

from 30-in. to 48-in. are made on a Quinn pipe machine. The compacting action of this machine is effected through two hickory tampers which force the concrete of semi-dry consistency between an inner core and outer mold. Both core and jacket revolve with the turntable and are synchronized with the tamping action. Aggregates and cement, in the ratio of 1:1½:2¼, are mixed in a Besser 18-cu. ft. mixer. These pipe are moved to the curing rooms with a Towmotor lift truck.

There are six curing rooms at this plant, each measuring 21 by 90 ft. All units are cured for 36 hours with live steam at temperatures around 150 deg. F. The steam is introduced into the room through five lines, one on each side wall, and three suspended from the ceiling. It is produced in an oil-fired Cyclotherm 85-hp. steam generator.

Wire reinforcing in the pipe is placed according to specifications established by the American Society of State Highway Officials. The cages are formed in a Universal wire roller and the loose ends joined with a spot welder. For any pipe section 36 in. or over, a double thickness of wire cage is used.

The plant has a maximum output capacity of 200 tons per 8-hour day. Nearly all of the plant's output is shipped on flatbed trailers which are loaded with a Ross Carrier 6-prong lift truck. It is interesting to note that preference is shown by most customers, in South Carolina at least, for the tongue-and-groove type of pipe. Moreover the company has stopped making 3-ft. sections since nearly everyone prefers the 4-ft. length.

About 50 men are employed at this plant. Top personnel include the following: W. W. Des Champs, superintendent; Karl S. Welden, plant foreman; T. J. Fogle, office manager; and W. B. Liles, sales representative.

Atlanta Meeting

(*From page* 201)

land said, are fundamentally sound. He pointed out the desirability of having qualified engineers handle sales and service on filler block jobs. Some producers who have had experience with this type of work feel, Mr. Copeland stated, that it is most important for the manufacturer to make installations with his own crew.

Executive Secretary E. W. Dienhart, executive secretary of N.C.M.A., was the final speaker on the program. The concrete masonry industry, Mr. Dienhart said, has serious responsibilities now that it leads the structural masonry field by so wide a margin. Producers must recognize and shoulder these responsibilities by delivering sound, quality units and by providing customers with adequate service on the job.

Mr. Dienhart reminded his listeners that the clay products industry has launched a tremendous program of research and promotion in a determined effort to recapture some of the markets it has lost. That industry, the speaker said, supports a much larger association staff, and it has just appropriated $1,250,000 for research alone.

In closing his brief talk Mr. Dienhart extended a cordial invitation to all members of N.C.M.A. to attend and take part in the association's annual convention in Chicago.

1950 Meeting Mr. Katterjohn read a letter from the mayor of Tampa, Fla., inviting the Southeastern group to hold its 1950 meeting in that city. This plan was adopted unanimously.

Plant Tour After the formal sessions were concluded, some 40 of those in attendance went on a chartered bus tour of several of the concerete masonry unit plants in Atlanta. Visits were made to the Atlanta Aggregate Company's plant, where H. E. Shaw acted as host, and to the Concrete Manufacturing Company's plant, where John Bailey was host. The visitors also had an opportunity to see an F & A floor system under construction when the party stopped at the Sherman Concrete Pipe Company's plant.

Among other highlights of the Atlanta meeting was the showing of an excellent color-sound movie by the Portland Cement Association. Entitled *The Drama of Portland Cement,* it showed step by step the processes used in making cement.

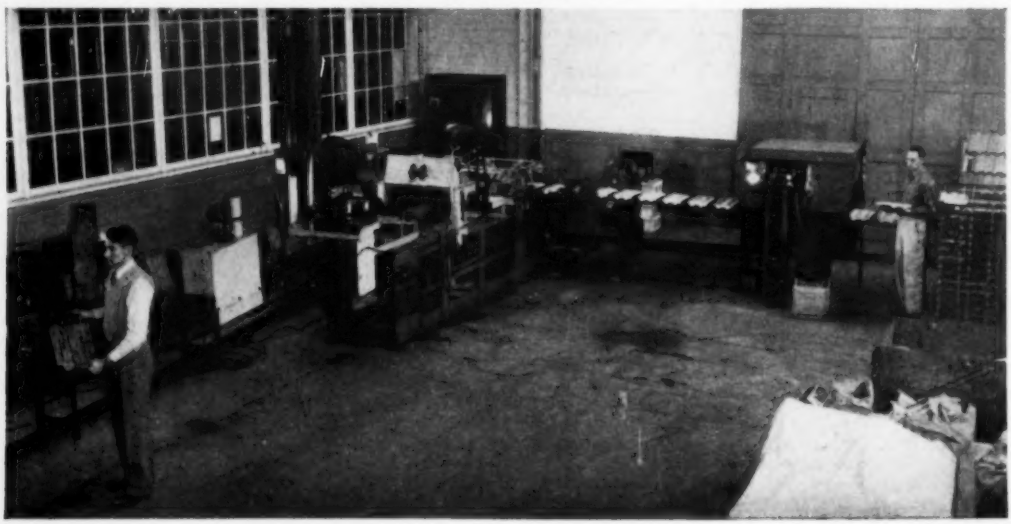
New Automatic Machine "Knits" Roof Tile at Rate of 24 per Minute

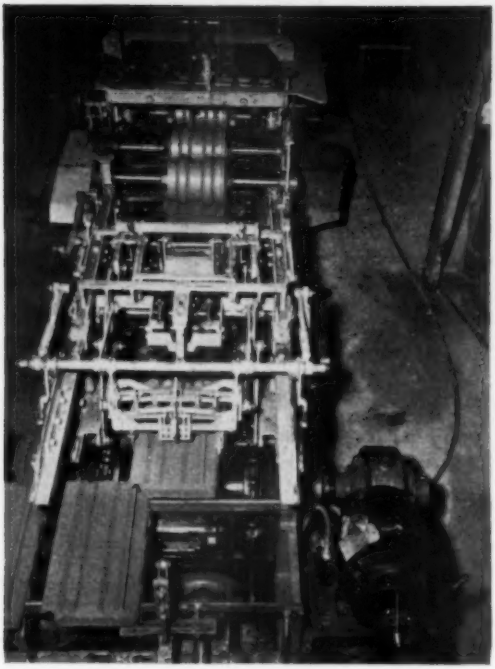
RAPID expansion of the market for concrete roof tiles in the United States is expected as a result of the introduction here of a high production machine which has been widely used for a number of years in New Zealand and Australia. Developed in New Zealand some ten years ago, the machine is manufactured and marketed in the Americas by the Besser Manufacturing Company under the trade name Besser-Anza Concrete Roof Tile Machine. It produces a 10- by 16¾-in. interlocking tile, incorporating deep run-off channels and weatherproof side lap, as well as headcheck, at the astonishing rate of 24 units per minute, or approximately 10,000 per 8-hr. day. The operation is entirely mechanical, including even the formation of the headcheck.

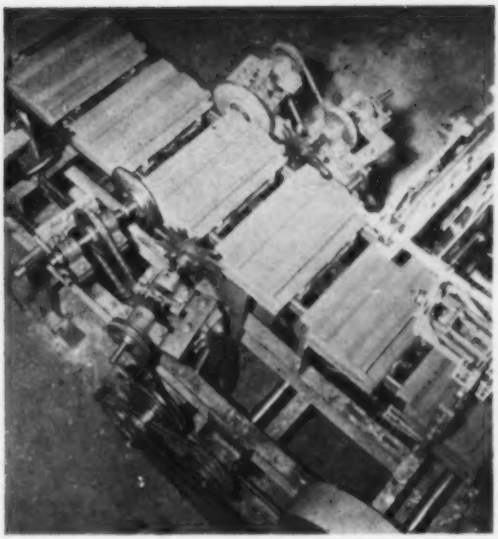
The roll or manufacturing head of the Besser-Anza machine utilizes an entirely new principle in forming tile, since the concrete is "knitted" in sections onto pressed steel pallets, rather than rolled. Called a "knitting roller" by the New Zealand developers, it is grooved to form the deep run-off channels and side lap which are features of the unit, but it utilizes an oscillating motion, combined with slow turning, to compact the concrete. Concrete is fed to the roller at the required height by an adjustable mechanical shovel —a method which is said to produce units of constant density regardless of minor variations in the material used. It is claimed that the "knitting" action permits the use of semi-dry mixes with aggregate passing the ¼-in. screen.

• Jesse H. Besser, president of the Besser Manufacturing Company, Duane D. Bryan, advertising manager, and George Agar, president of Atlas Products (Overseas), Ltd., developer of the Besser-Anza tile machine.

• A general view showing the principal units in the roof tile production line at Alpena. Pallets are fed to the conveyor at the left, and oiled in the small booth just behind the operator. Forming, finishing, shearing, and applying headchecks are all accomplished automatically by the machine in the center. Finished tile, painted and ready for curing, are delivered at the extreme right, where they are placed by hand in special curing racks.







• The ends of the tile are cleaned and finished by rotary blades.

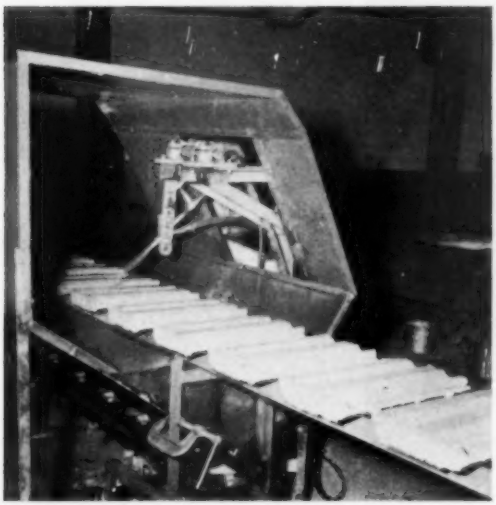
• Left: A closeup of the forming machine, showing "knitting" and finishing rollers at the top. The mechanical pick-up device in the foreground places the tile on a transverse conveyor.

Supported on individual steel pallets, the tile passes from the forming head in a continuous ribbon, and the top is smoothed by two finishing rollers which float on the surface of the material. The units are sheared apart while the ribbon is in motion, and the excess material between adjacent pallets is automatically formed into the headcheck which closes off the back or top of the tile.

After the headcheck is formed, the pallet and tile are picked up mechanically and set down on a transverse chain conveyor, thus effecting a 90-degree change in the direction of travel. As the units move along this conveyor, both ends are trimmed and finished by rotary cleaning devices.

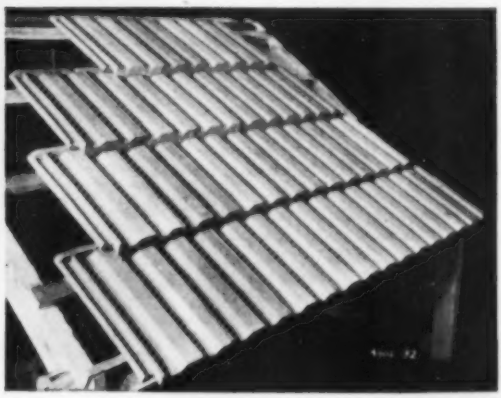
Permanent color can be imparted to the tiles integrally at the concrete mixer, or by spraying the units in a small booth set up over the run-out conveyor (see cut). In the latter case the color consists of a heavy body of portland cement and mineral oxide which are ground together in a ball mill. This coating is sprayed on the units automatically by means of a special cement gun as they are conveyed through the booth.

At the discharge end of the conveyor the tiles are hand loaded into special racks for curing. Cured



• Left: Tiles can be colored integrally at the mixer or by automatic spraying in the small booth shown at the left. For spray painting, portland cement and mineral oxide are ground together in a ball mill.

• Below: A view showing tiles laid on wood battens. Units lay up 120 per square in the roof. Headchecks and side laps are said to be completely weatherproof.



units, still loaded in the racks, are stripped from the pallets at the feed end of the production line, where the pallets are dropped onto a chain conveyor and the tiles are loaded onto wood shipping pallets. It is customary to break the bond between tile and steel pallet with an air chisel just before the units are stripped. The steel pallets are sprayed automatically with a special oil mist just before they enter the forming machine. It is claimed that no cleaning or brushing is required to keep them in condition.

The standard tile produced on the Besser-Anza machine weighs 7½ to 8 lbs. In a 1:4 mix with a yield of 55 to 60 tiles per bag of cement, they are said to show an average breaking strength of 400 to 500 lbs. (on 10-in. centers), against most code requirements of around 200 lbs. The tiles actually lay up 120 units per square in the roof, but the practice is to ship 125 units per square to allow for breakage in handling. The process requires a 12-cu. ft. batch mixer. The machine is adaptable to making other shapes of tile if there is sufficient demand to justify the change-over.

The Besser company will market the Besser-Anza tile machine in the Americas under a use agreement, and only sufficient machines will be placed to take care of the market.

1949 Block Production

(*From page* 203)

cement for placing the industry's product in walls. This condition existed only in a few relatively isolated localities during 1949.

Producers were also asked to state their opinions of business prospects for 1950. About 55 percent of the replies indicated that sales would show an increase over 1949, with estimates ranging from 5 percent to 30 percent. Forty percent of the returns stated that 1950 volume would be about the same as 1949, and only 5 percent predicted a drop in business. These predictions were at best merely personal opinions, based on casual appraisals of local conditions, but they serve as an indication that block producers are no longer resigned, as they once were, to the loss of the markets which they acquired during and immediately after World War II.

In general the producers who predicted greater sales in 1950 indicated that they would carry out expansion programs some time during the year. In most cases the capacity increases mentioned were of sufficient magnitude to indicate that they would be brought about by the installation of new equipment, rather than by speeding up existing equipment.

No fair appraisal of the outlook for concrete masonry units in 1950 is possible without careful consideration being given to the floor filler market. Although no statistics are available on the total number of units installed in floors during 1949, it is certain that this figure was significant, and the industry's awareness of this still relatively untouched market grew by leaps and bounds. A number of block producers are known to have placed a million or more units in floors during the past year, and many others made preparations for entering this field by obtaining franchises to use one of the several excellent systems available.

Officials of the National Concrete Masonry Association, which represents a substantial part of the block industry's total productive capacity, believe that the floor filler unit market may eventually take up to 500,000,000 units a year, or approximately half of the industry's current total output. To focus attention on this tremendous new market the association plans to concentrate its Chicago meeting program in February on sources of new business, with particular emphasis on floor filler applications. At that meeting (February 6 to 9) it is planned to inspect a number of the plants in the Chicago area.

The association's program for 1950, according to Executive Secretary E. W. Dienhart, calls for greatly increased activity in the field of merchandising. Every effort will be made to place tangible, usable sales helps in the hands of members, and to encourage producers to undertake effective programs in the field of promotion and sales.

Entering a new decade, the block industry could look back on an impressive list of accomplishments. It had expanded tremendously, not only in size but in public esteem, and its product was widely accepted as a prime building material. And perhaps most significantly of all, at least from the standpoint of its future prospects, the industry had successfully weathered the change from a seller's to a buyer's market. Under the fully competitive selling conditions that prevailed throughout 1949, the block industry had demonstrated conclusively its capacity to retain its present markets and to develop new ones.

Harry F. Thomson Named Material Service R.M.C. Supervisor at Chicago

It has been announced that Harry F. Thomson, former president of the General Materials Company, St. Louis, Mo., has been placed in charge of the Materials Service Corporation's new Chicago ready-mixed concrete operations. (See THE CONCRETE MANUFACTURER, December, 1949, p. 118.)

Harry F. Thomson

A veteran of more than 20 years' experience in the concrete industry, Mr. Thomson is thoroughly qualified for his new duties. He is vice-president of the American Concrete Institute and a past president of the National Ready Mixed Concrete Association.

N. Y. Research Bureau Cites Popularity of Masonry Walls

According to the Construction Research Bureau of New York, cinder or concrete block exterior walls will probably double in popularity in the next year or two because of the development of new types of block and the high labor costs involved in other types of construction.

Among the new developments mentioned by the bureau are blocks with interlocking ends which need no mortar; vari-colored units which produce an effect of cut stone; low-cost hollow units covered with stucco; and pigmented block which obviate the necessity of painting.

After operating the Renton Building Block Company at Renton, Wash., for the last three years, Mr. and Mrs. H. L. Stigenwalt have purchased the site and building, along with all equipment for block making, from the Anderson & Knudson Corporation.

NEW MACHINERY and SUPPLIES

● New Building Brick

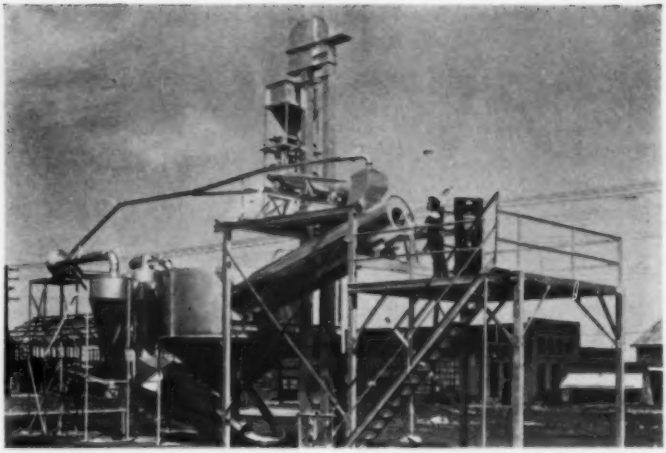
"Chem Brick", described as an all-purpose practical brick for all types of construction is manufactured by a process developed by the Jackson & Church Company, Saginaw, Mich. First licensee for Chem Brick is the Detroit Brick & Block Co., Detroit, Mich.

The product is a hard, silica-base brick. According to the manufacturer, Chem Brick meets the A.S.T.M. grade SW specifications for first quality brick, but is at the same time attractively priced, uniform in size, strength and quality, and low in laying cost. Other desirable features cited include the following; meets grade A specifications for all classes of brick; makes dryer walls through low absorption; has test-proven weathering qualities; forms walls which tend to become monolithic; and is easy on masons' hands due to smooth texture and square edges.

● Concrete Bend Machine

The Carpenter Manufacturing Company, makers of steel forms for concrete septic tanks and tank handling equipment at Richmond Va., are now making deliveries on their new "Block Bender", a device for producing concrete "turns" for use in drain and sewer lines and in septic tank systems, as well as for the lower end of downspouting from buildings.

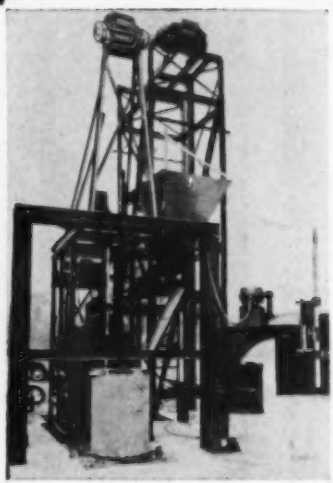
The Block Bender has a mold box vibrated by a motor. A core mechanism is removed from the finished unit, leaving the "bend" with two bell holes at the entrances. Using this machine, two men can turn a unit out in 1½ minutes, or one man can make one in 3 minutes.



The Muehleisen perlite process unit is a stationary, horizontally inclined setup. Dimensions: approximately 12 by 26 by 32 ft. Production rate: 1,000 lbs. of perlite ore per hour. The unit has completely automatic temperature controls. It requires only two men to operate the plant. Expanded perlite is sacked directly from the machine. Power is natural or bottled gas or light fuel oil. Delivery can be made in 20 days, and the unit is erected and in operation within 10 days after its arrival. There are present 10 units in operation in the United States and Canada. Muehleisen Perlite Process, Inc., 1512 E. Lancaster, Fort Worth 3, Tex.

CONTINENTAL MODEL T.I.C. 60

for ECONOMICAL PRODUCTION



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CONTINENTAL provides a complete line of accessories and cast equipment for making concrete pipe.

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● Duct Makers

"Ductube", a pneumatic rubber tubing designed for molding ducts in concrete, has been placed on the market by the Ductube Company, 940 Shoreham Building, Washington, D. C. It is used for any application requiring small holes or ducts in concrete, e.g., for drains, grout holes, telephone ducts, power ducts and lightweight slabs.

The tubing molds ducts which are either straight or curved, as desired. It is available in standard lengths of 10, 20, 30 or 40 ft. and in sizes for molding ducts of 1, 1½, 2 or 3 inches in diameter.

On the job it is inflated with an ordinary tire pump or with a compressed air line and then laid in place. Concrete is poured over the Ductube in the usual manner, and when the concrete has set, the tubing is deflated and removed. The illustration shows Ductube laid for ducts which are to be a part of a hot-air system in a basementless home.

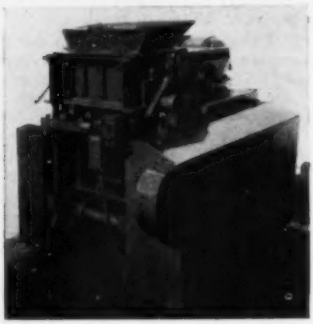
● Electric Lift Truck

The "Power Ox", a Barrett-Cravens all-electric lift truck, is available in standard models with a range of platform lengths from 36 to 72 inches, which take care of practically all requirements.

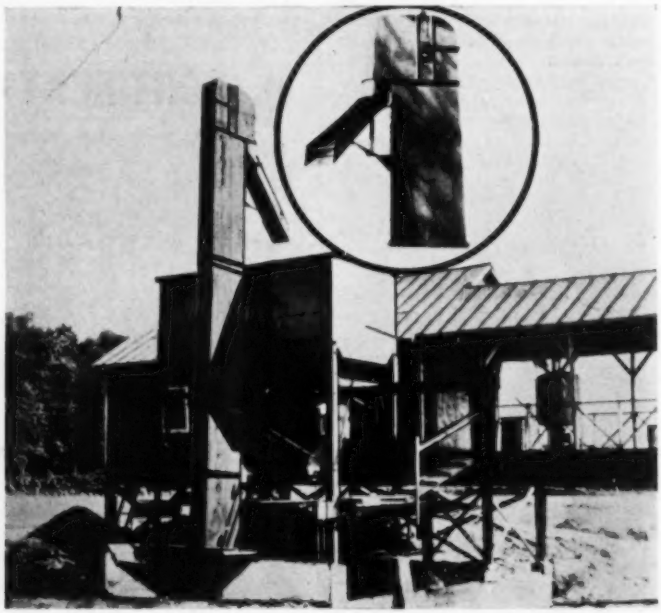
The illustration shows a standard model Power Ox moving a rack load of concrete block. The Power Ox is being used in increasing numbers for this application, according to its manufacturer, not only because it handles green block without damage, but for sound economic reasons. This all-electric lift truck multiplies the amount of material which one man can move in a given time. One Power Ox will permit a full operating circle in a multiple machine operation, and will handle a total ten-hour day tonnage of approximately 475 tons, with a very substantial man-hour savings.

For the special requirements of a Minnesota concrete pipe and culvert manufacturer, Barrett-Cravens engineers designed a lift truck having a platform length of 84 inches and a capacity of 4,000 lbs. This truck carrier 10-ft. pipe safely from the machine to the curing room.

The Power Ox is manufactured by the Barrett-Cravens Company, 4629 S. Western Blvd., Chicago, Ill.

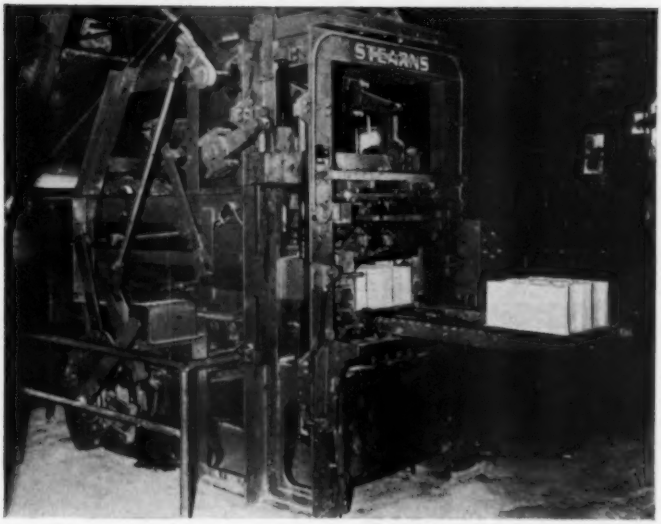


Pictured above is the Appley "Little Giant" block machine, equipped with the power ejector attachment, a recently-developed device which has increased the machine's productive capacity by 25 percent. In this unit the cycle of ejection is predetermined, and the ejector stops itself at the end of each cycle. Manufactured by J. W. Appley & Son, Inc., St. Petersburg, Fla.



Construction Machinery Sales Company, Waterloo, Ia., has on the market a totally-enclosed bucket elevator for use in conjunction with a three-compartment bin-batcher for cement or raw aggregates. The elevator is controlled from the ground level, and the self-centering chute extends automatically when feeding either end bin. This elevator is made for standard two- or three-compartment bin-batchers. With installations of any specified center section, extensions can be made to fit the bins with extended sides, as pictured.

To facilitate ground-level loading directly from a dump truck into the hopper, the bin must be mounted at least 2 feet higher than the loading level, so as to provide an adequate ramp extension. The capacity of the elevator is 40 t.p.h.; it is powered by a 5-hp. electric gear head motor or a gasoline engine. Hopper capacity is 1 cu. yd.



● Plain-Pallet Block Machine

The Stearns "Model 50" weighs more than 16,000 lbs. and incorporates all of the best features of Stearns machines, plus many entirely new developments. Its rugged construction was designed for years of trouble-free operation. Its positive cam operation is all near the base of the machine, to eliminate any stress near the actual block-making or strip mechanisms. Every part of the machine is accessible for inspection or adjustment. The extra large 44-in. drive shaft and the 2 15/16-in. cross shafts are mounted in anti-friction bearings to insure long life and smooth operation.

The Model 50 is, of course, equipped with the Stearns dual-shaft synchronized uni-directional vibrator unit, combined with pressure to give proper compaction in all types of concrete units. This new vibrating unit is standard equipment on all Stearns Model 15's Joltcretes and Model 50's. It provides sharper vibration than former vibrating units, eliminates "touchy" adjustments, and simplifies the clean-up problem. It can be installed in machines now operating in the field.

It is fully automatic and has a split cycle operation controlled by an automatic timer to permit maximum production for the type of aggregate used. Electrical equipment includes a remote mounted panel completely wired and a single rotary limit switch with multiple contacts which controls all machine operation, plus a positive height control.

● Gas Truck

Coincident with the opening of its new 16-acre plant on Roosevelt Boulevard opposite Northeast Airport in Philadelphia, The Yale & Towne Manufacturing Co., Philadelphia Division, announced the first time in its 80-year history of manufacturing materials handling equipment the production of gasoline-powered industrial trucks. The new line, to be known as the "Lift King" gas truck line will feature fluid drive, automotive controls, hydraulic piston lift (in two stages by means of a ram-within-a-ram), and low-mast heights with high free lifts.

The Lift King is equipped with standard Chrysler fluid drive, with fluid coupling which permits the operator to progress from slow to fast speeds, and vice versa, without operating clutch or gearshift levers.

The hydraulic lift is actuated by an exclusive ram within a ram which gives two stages of elevation. The elevating fork carriage rides on heavy-duty thrust roller bearings, eliminating the power losses which result when elevating channels slide on stationary channels. All hydraulic connections are placed to prevent hose lines from dangling from the elevated mast.

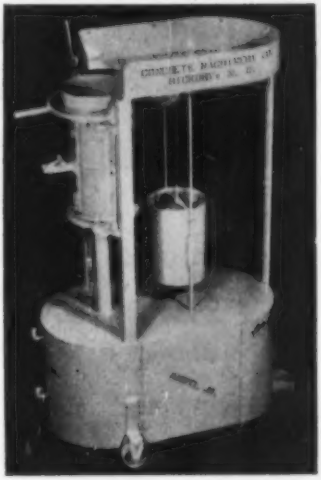
The hydraulic lift is constructed to permit a full 66-in. load-lift before the telescopic mechanism begins to rise. This feature is a valuable asset in loading railcars, street trucks, and low headroom spaces. This same model has a maximum lifting height of 130 in., can handle up to 6,000-lb. loads and has a collapsed height of 83 in. A second model is available with a free lift of 51 in., a maximum lifting height of 100 in. and collapsed height of 68 in.

One of the special virtues of the new Yale Lift King gas truck line is high lifting speeds—30 f.p.m. at full load. In warehouse-tiering and heavy-schedule operation this "extra" means many production-dollars.

● Tile Maker

The "Marvel Junior" drain tile machine manufactured by the Concrete Machinery Co., Hickory, N. C., has been engineered for fast, accurate production of 4- and 6-in. tile. It is sturdy, durable, light, and easy to operate. It can be stored out of the way when not in use and rolled back quickly for resumption of production.

Speed of operation is proven by the fact that one man can turn out a 4-in. tile in 60 seconds. The machine is powered with a ½-hp. motor. Several operators can work at the machine at one time, each with a mold band. The tile is offborne directly on the floor, and the machine is pushed forward as necessary, saving steps and time.



The packer is attached to a 1-in. shaft, supported by two triangle "Bronzoil" shockproof bearings. The shaft, bearings, motor, and pulleys are completely covered.

According to the *Oklahoma Industrial News*, the newest industry in El Reno (Okla.) is a bulk concrete mixing plant installed by the Botts-Hulme-Brown Lumber company. The plant, managed by Robert F. Atkins, has been in operation since last fall.

P. Y. K. Howat, who heads the Howat Concrete Company of Washington, D. C., was recently elected president of the Engineers Club of Washington.

● Truck Mixer

Chain Belt Company of Milwaukee announces the Rex "Adjustable Discharge Moto-Mixer," the horizontal drum mixer with the high discharge feature. According to Chain Belt, the mixer combines the fast, thorough mixing, fast charging, fast discharging and economical operation of the horizontal mixer with the versatility of the high discharge mixer.

The discharge of the mixer can be elevated to a maximum height approximately equal to any high discharge type of mixer, or elevated to any intermediate point in the hoist range. This makes for greater flexibility in getting concrete into the forms with ease and speed, by reducing spout manipulation.

Other exclusive Rex features include Rex chain drum drive, Manten steel

drum and blades, versatile spouting, enclosed water system and the Rex nonclogging water nozzle. In addition, the Rex-Adjustable Discharge Mixer has fluid drive for smoother operation and protection from shock loads to motor, transmission and final drive.

Chain Belt Company also manufactures Rex Building Mixers, Rex Pumpcretes, Rex Pavers, and Rex self-priming water pumps.

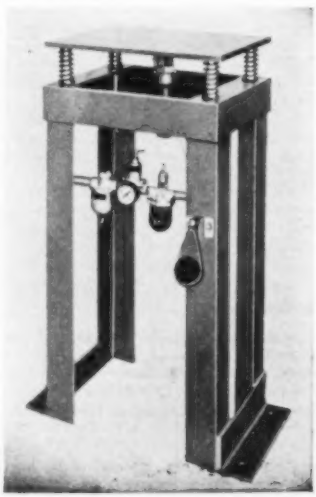
● Vibrating Table

The Cleveland Vibrator Company has announced the development and construction of vibrating tables utilizing pneumatic power. The first standard table in the line is model CVT-10, shown in the accompanying illustration. This new unit features a solid 12-by 18-by ½-in. sheet steel platform; and table operation is controlled by means of a knee valve which actuates the vibrating mechanism. The all-steel platform can be replaced with a wood platform or various types of screens to facilitate handling a wide range of applications.

Utilizing a Cleveland Type SA 1¼-in. (piston diameter) pneumatic vibrator, the new table provides a maximum speed of 1950 vibrations per minute. Intensity of the vibration can be varied by the operator by means of the pressure control regulator.

Model CVT-10 vibrating table features all steel construction. Heavy-duty steel springs "float" the all-steel platform to prevent the transmission of vibration to the floor. Steel pins limit lateral movement of the platform. Support for the platform, vibrating mechanism and air controls is provided by sturdy angle-iron legs.

Standard equipment of the new Cleveland model CVT-10 vibrating table includes an air line filter, an air line lubricator which provides for long trouble-free operation, and a pressure control regulator for maximum safety of operation. Maximum operating speed is obtained on a standard line pressure of 80 p.s.i. at which air consumption is only 8½ cu. ft. per minute. Cleveland Vibrator Co., 2710 Clinton Ave., Cleveland 13, Ohio.



PROGRESSIVE
BLOCK MANUFACTURERS
USE

AUTOMATIC
ELECTRO-VISOR
QUALITY CONTROL

A GREAT ASSET IN PRODUCING
BETTER BLOCK . . . FASTER
MODERNIZES YOUR VIBRAPAC

SUPREME CONCRETE BLOCK & PRODUCTS, INC., Hagerstown, Md. —
"With your Automatic Control we are now making more and better block. Our block remain uniform in height and test strengths, day after day without all the usual worry."

CONCRETE PIPE & PRODUCTS CO., INC., Richmond, Va. —
"This Automatic Control has bettered the quality of our block and increased production. We are very well satisfied."

HARRY WELLNITZ, Columbus, O. —
"The Electro-Visor control has enabled us to produce the best products we have ever made. We have many new accounts as a result of uniformity in height, surface texture, density and strength. We believe it is one of the most important contributions to the industry in years."

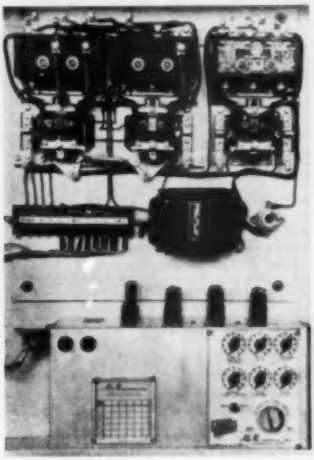
LEHIGH BUILDING BLOCK CO., Allentown, Pa. —
"We have never made block as uniform in height and density as since Electro-Visor was installed. The equipment would be worth every cent paid for it even without our increased production of 3 more blocks per minute."

Electro-Visor tried and proved over many months of use.
You, too, can obtain CONTROLLED DENSITY . . .
UNIFORM HEIGHT

M&M ENGINEERING CORPORATION
2200 Montcalm St. Indianapolis 23, Ind.

● Block Control Device

An automatic quality control for block machines known as the Model 9-B "Electro-Visor Automatic Quality Control" is furnished complete with two vibrator



motors of special design, a 7½-hp. drive motor equipped with "Electrolic" brake, a complete electrical panel and the Electro-Visor electronic unit, together with all needed installation materials.

According to the manufacturer, this device will deliver 1080 blocks per hour. All units will be 1/32 inch of the predetermined height and uniform in density. M. & M. Engineering Corp., 2240 Montcalm Street, Indianapolis 23, Ind.

● Changes in Truck Body

Several changes have been made in the Dumpcrete body during the last year. The "swingaway" type of chute and the checkered steel plate running boards have been standardized on 2-, 3-, and 4-cu. yd. capacity bodies.

In addition the gate wings are now built higher and with greater slope than previously, to permit an even faster unloading and placement of the concrete. Discharge height on the 4-cu. yd. body was increased to 6 ft. 4 in. Manufactured by the Maxon Construction Company, Inc., Dumpcrete Division, 131 N. Ludlow Street, Dayton 2, O.

AGILE and FAST...

for easy handling in tight spots!

2 SPEEDS FORWARD and REVERSE

—another Towmotor efficiency feature

A lift truck travels in reverse 50% of the time. That's why Towmotor has 2 speeds forward, 2 speeds reverse—offering fast travel in both directions.

Ask to see the New Towmotor Movie, "The One Man Gang," right in your office.

Towmotor rear wheel steering—opposite the load—provides fast and easy maneuverability under all conditions. Designed for sharp angle turns, Towmotor steering mechanism permits rapid travel in and out of box cars, highway trucks, narrow aisles and doors, cutting mass handling time and costs. Compare Towmotor with any other fork lift truck and you will see why Towmotor engineered features make every Mass Handling job easier, faster, safer. 10 models plus standard and specially designed accessories handle loads from 1500 to 15,000 lbs.—a Towmotor for every job. Write for a copy of the "Operators Guide." Towmotor Corporation, Division 13, 1226 E. 152nd St., Cleveland 10, Ohio. Representatives in all Principal Cities in U. S. and Canada.

every handling job is easier with TOWMOTOR MH!

TOWMOTOR
THE ONE-MAN-GANG®

FORK LIFT TRUCKS and TRACTORS

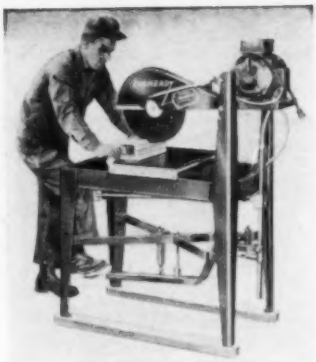
RECEIVING • PROCESSING • STORAGE • DISTRIBUTION

● Versatile Saw

The new "Eveready Briksaw" now available is said to have unusual features for fast, low-cost masonry cutting. In addition to both wet and dry cutting, portability and streamlined design with rugged construction, the Briksaw reduces the operator's first cost by enabling him to buy the saw originally equipped for standard dry cutting. Later, for complete dustless operation, he can install an inexpensive wet-cutting kit in a few minutes with a screwdriver and pliers. The pump used for wet cutting cannot be damaged by operating it for dry cutting . . . no need to unhook the Eveready pump when cutting dry.

In four seconds with the patented "Adjusta-Height" feature, the cutting head height can be adjusted for materials of widely different sizes.

Another exclusive feature is the patented "Toe-Matic" control by which the operator with a light upward tilt of the foot-treadle swings the cutting head instantly in an arc of 10 inches up or 10 inches down. Toe-Matic control, together with Adjusta-Height lets the operator slice any kind of cut in any kind or size masonry material as fast as the pieces hit the saw. Among the cutting speeds listed are: Firebrick, 4 seconds; concrete block, 19 seconds; face brick, 8 seconds; glazed tile, 21 seconds; glass block, 8 seconds; vitrified pipe, 18 seconds, and vitreous brick tile, 21 seconds.



The one-piece cutting head can be removed completely in 21 seconds from the saw frame without tools.

An automatic blade pressure spring (patented) automatically adjusts the blade pressure to the hardness or softness of the material.

A complete line of Eveready Briksaw blades is available in dry abrasive, wet abrasive and diamond blades.

A notarized statement that every Eveready Briksaw blade has passed speed and balance tests in excess of 50 percent above normal operating speeds must be certified before the blades can be packed for shipment.

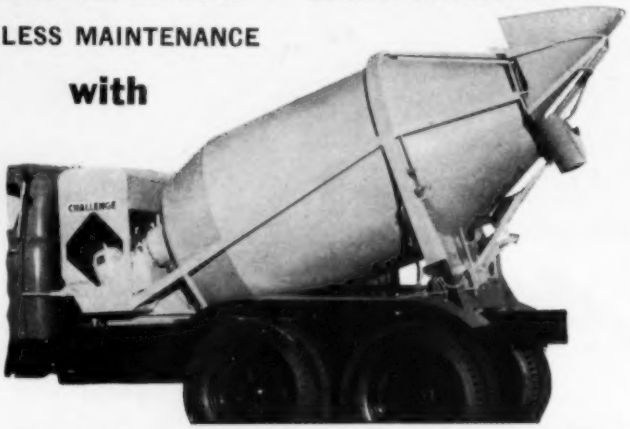
Briksaw blades fit any make of masonry saw. Stocks of all standard type blades are available.

Eveready Briksaw Company, 1509 South Michigan Blvd., Chicago.

GREATER PAYLOAD • LOWER INVESTMENT

LESS MAINTENANCE

with



CHALLENGE

"THE MODERN TRUCK MIXER"

Means Greater Profit!

Here's the mixer experienced operator's* want . . **and are buying!** All unnecessary weight has been eliminated with the result that it will carry a greater legal payload than mixers of comparable size. Overhang of mixer beyond truck chassis permits driver to get closer to forms and effect higher discharge. This modern mixer, made in two sizes: 3, and 5-6 yard capacity features fast loading and unloading, and will mix concrete in strict accordance with specification jobs.

The Challenge costs less too . . hundreds of dollars less! Equally important is its easy, low-cost operation and maintenance. Ford heavy-duty industrial engine, clutch, transmission, universal joint; and Link Belt worm drive are used as standard equipment with parts immediately available from local parts dealers.

Investigate these, and the many other outstanding features of CHALLENGE, The Modern Truck Mixer. You'll be glad you did . . no obligation of course. Visit our booth No. 133 at the N.R.M.C.A. Convention, Hotel Stevens, Chicago, January 23-27 or write direct to:

***Recent buyers of Challenge Mixers in the West include Consolidated Rock Products Company, Blue Diamond Corp., Western Concrete & Equipment Co., Livingston Rock and Gravel Co., and many others.**

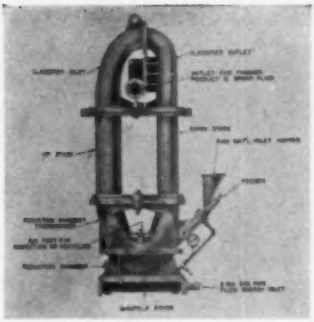
COOK BROS.

EQUIPMENT COMPANY

Exclusive National Distributors

1815 North Broadway, Los Angeles 31, California

"American" grinders, made by the W. A. Riddell Corporation, Bucyrus, O., are supplied in eight sizes, ranging in capacity from 3 to 75 cu. yds. per hour, producing minus ¾-in. aggregate ground cinder and clinker. Other uses of the device are for reducing such materials as bauxite, dolomite, feldspar, fuller's earth, magnesite, mica, phosphate, portland cement shale, pumice, refractories, sand-lime brick, silica rock, slag, slate and talc. At the plant of the Texas Lightweight Aggregate Company at Eastland, Tex., an American grinder reduces haydite to size.



A fluid energy reduction mill used to produce colors for the cement and mortar industry is shown in the accompanying illustration. This mill is the product of the Mineral Pigments Corporation, manufacturers of synthetic pigments at Muirkirk, Md. There are no moving parts in the mill, the grinding resulting from the great velocity imparted to the particles fed into the device. The action is that of rubbing, with the particles grinding against one another. With this mill it is possible to produce pigments as low as 6,000-mesh fine.

● Versatile Block Machine

The "Multico" automatic block machine, available in two models—Model No. 2, producing two blocks per cycle, and Model No. 3, producing three per cycle—is a fully automatic, hydraulic-powered machine produced by the Multiplex Machinery Corporation, Elmore, O. Special features cited by the manufacturers are a separate "Power-Pack" control cabinet, accurate die-cast forming controls, simplified mold box for rapid change, simple operation, and pressure vibration plus tamping.

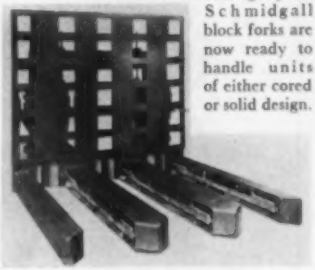
The separate power cabinet reduces the investment cost, as it can serve later models, if desired. The forming controls were designed for rapid production with accuracy to within 1/64 in. A mold box change can be made in a few minutes to turn out block of any type or size. Electric or hydraulic powered offbearer is controlled by a simple valve arrangement and removes 4 units at once.

● Block Fork

The Schmidgall Manufacturing Company, 307-311 Cass Street, Peoria, Ill., has announced several design and construction improvements on its Model 33 concrete block fork.

The gripper shoe assembly has been completely redesigned to assure positive handling of 12- by 8- by 16-in. block. Mechanical modifications to the front and rear frame assemblies permit additional travel, enabling the gripper shoe assembly to travel the distance required to pick up the 6- by 8- by 16-in. size of block in the usual manner on the 6-in. dimension.

With these modifications and other changes, the Schmidgall block forks are now ready to handle units of either cored or solid design.



UNIT
½ and ¾ YARD EXCAVATORS
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CRANES UP TO 15 TONS
Fully Convertible
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BUILT FOR ALL-AROUND
Heavy-Duty Service
UNIT is tough! UNIT is versatile! That's why you can use UNIT on any type of job requiring shovel, clamshell, magnet, dragline, trenchoe, grapple or backfiller. And it's easy to change from one attachment to the other, right on the job. UNIT gives you all the power and speed you need, plus these exclusive features: Automatic traction brakes . . . Disc-type clutches . . . Drop forged alloy steel gears...Splined shafts...One-piece cast gear case ...Straight-line engine mounting.
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FULL VISION CAB for GREATER SAFETY
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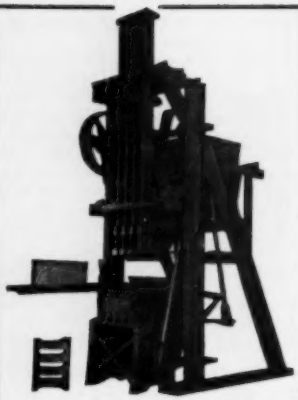
SHOVELS • DRAGLINES • CLAMSHELLS
CRANES • TRENCHOES • MAGNETS



An All-Purpose Machine

The Junior Stripper will turn out more blocks per man than any other hand-operated machine on the market . . . 200 per hour being easily maintained! Nor has quality of output been sacrificed for the sake of speed. Units are uniformly dense, true to shape, of uniform texture.

Stearns Clipper Stripper Machines; Stearns Jolterete Machines; Stearns Mixers; Cast iron and press steel pallets. Straublox oscillating attachments, etc. Repair parts for: Anchor, Stearns, Blystone Mixers and many others.

ANCHOR CONCRETE MACHINERY CO.
G. M. Frisl, Manager — Columbus, Ohio

DRY WALLS

Interior or Exterior
Above or Below Grade

Eliminate costly guess work in solving wet wall problems. Seal and beautify porous walls of concrete block, tile, stucco, etc., with Spray-O-Bond Concrete Sealer. It's easy to apply — almost like brushing on paint. Used successfully by contractors for over 20 years. A post card will bring you the name of your nearest dealer.

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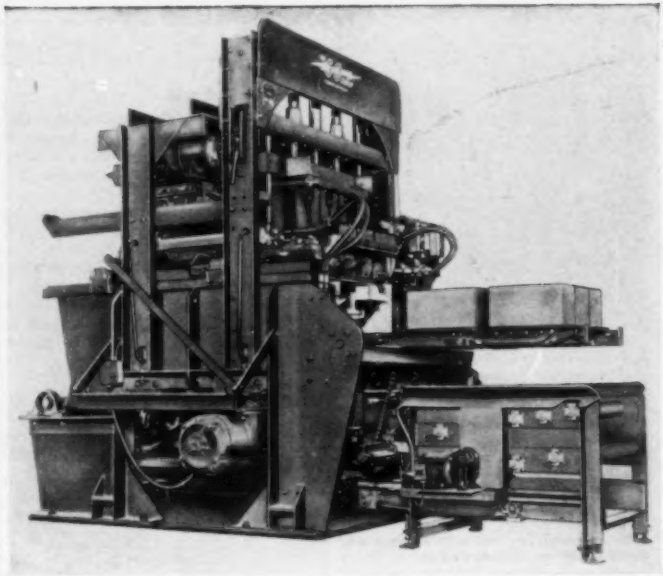


● Automatic Block Maker

The following features distinguish the "GoCorp Senior" block machine, product of The Gene Olsen Corporation: automatic operation, including pallet return and quality control; each step adjustable to accommodate any block and aggregate; hopper feed direct to mold box; capacity of 12 8-in. equivalents per minute; hydraulic drive; "resonant" vibration; plain pallets and racks with three 8-in. units per pallet; and low cost.

Pallets are cleaned, oiled and reversed during each cycle. Other GoCorp equipment includes batch mixers, continuous mixers, testing machines, pipe and drain tile machines, and a complete line of parts and attachments for Stearns equipment. The Gene Olsen Corp., 401 Grace St., Adrian, Mich.

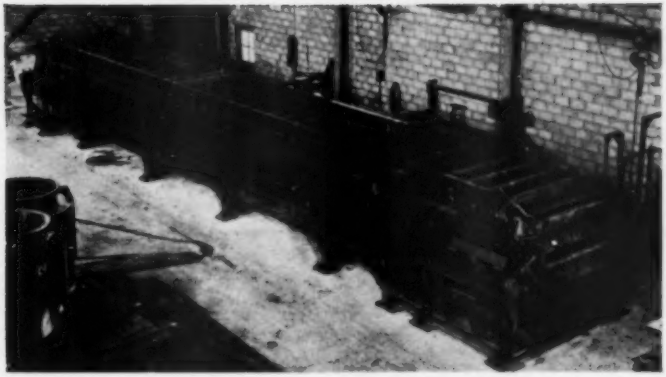
● Power Truck

A new model lift truck designed to pull live and semi-live skids completely by power is announced by Lift Trucks, Inc., 2425 Spring Grove Ave., Cincinnati 14, O. The new model, the hydrolectric "KTL," is designed to enable users of the semi-live skid system to effect considerable savings in handling costs with a small initial investment.

KTL's wheel base of only 40 inches permits short turns in close quarters. Two speeds forward, two in reverse.

Other features of the new truck include two front driving wheels and a differential transmission sealed in lubricant. In addition the KTL offers all the other exclusive operating advantages of the hydrolectric "K" line lift trucks engineered and patented by W. C. Stuebing Jr. Rated capacity of the hydrolectric KTL is based on pulling a semi-live skid loaded with 4000 lbs.

"Stopall", a new waterproofing made in five types—for concrete, concrete products, wood, leather, and textiles—is a product of Stopall Waterproofing Manufacturers, Inc., 212 Commerce Building, Kalamazoo, Mich. These water repellent finishes were developed in connection with General Electric's new silicones. Each is a transparent and penetrating solution which leaves no surface film or coating. Application is by brush or spray.



● Sintering Machine

The Leftwich sintering machine, developed by R. F. Leftwich and produced by the Besser Manufacturing Company, Alpena, Mich., used in making Aglite expanded aggregate, consists of a series of sintering pans carried between two strands of roller chain which pass over sprockets at the ends of the machine to form a continuous, straight-line traveling grate.

The individual pans carrying the sinter charge are 15 inches wide, 5 feet long and 8 inches deep. Length of the machine from center to center of the sprockets is 54 feet. Speed of the pans is from 4 to 10 f.p.m. as they carry the charge under a 6- by 5-ft. ignition hood. Next they pass over a series of wind boxes under the machine which are connected through valves to a manifold.

The first Leftwich machine placed in operation was installed at the Marietta Concrete Corporation's new Aglite plant in Marietta, O.

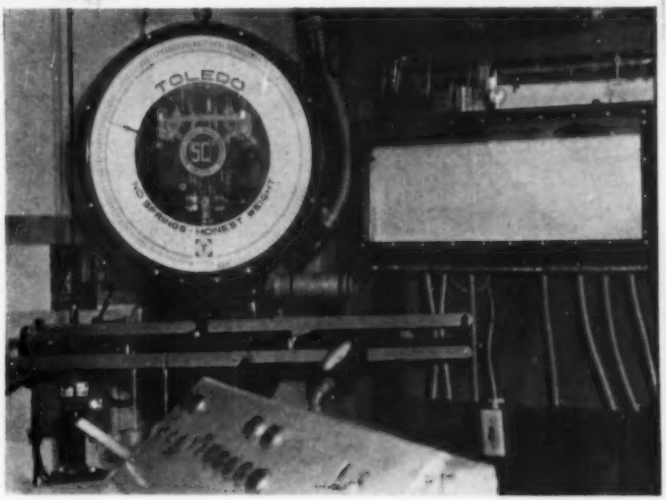
● Hydraulic Pipe Machine

A hydraulic packerhead pipe machine producing 3-ft. joints in 12 to 32 seconds with fewer operators and at less expense is the claim of the Houston Concrete Machinery Company for its Dixon "Model C".

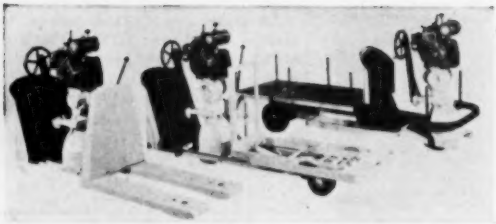
Features cited by the makers are fingertip single-valve control and variable-speed drive permitting simple and easy change. No pallets are necessary for bell-and-spigot pipe. The variable-action hydraulic pump can be changed instantly while in operation. The Model C has a completely automatic spinning bellpacker. The table rises, lowers and locks automatically. Reinforced channel beams and sturdy construction assure long life and the minimum of maintenance. This machine offers virtually silent operation, according to the manufacturer, even at top speeds. Steel-cut, heat-treated gears mesh smoothly, and the V-belt drives and twin-disc clutches provide quiet action.

All plates, packerheads, jackets, bell packers and wearing parts on the Dixon Model B are interchangeable with the Model C. Both bell- and spigot and tongue-and-groove pipe can be made. The floor space (minimum) is 64 sq. ft., and height is 13½ ft. The Houston Concrete Machinery Co., 6600 Washington Avenue, Houston, Tex.

The accompanying illustration presents the "Perma-Tiler" machine, manufactured by the Perma-Tile Concrete Products Company, 2201 Arrowhead Avenue, San Bernardino, Calif. The device is of all-steel construction and is powered by a 1-hp. electric motor. Capacity is 10 tile per minute. The Perma-Tiler is sold with a complement of molds sufficient for normal operation.



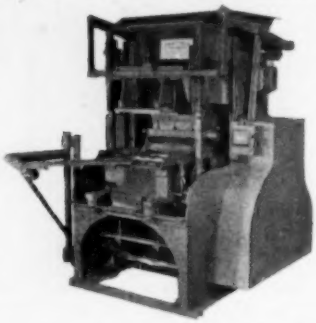
The principal poise setting of this Scientific Concrete Service Corp. (SC)² scale is for total water. The aggregate surface water is automatically deducted by hangers and discs (left). The scale has push-button start, automatic cut-off, and two-speed loading. Its automatic recorder records the delivered weight of all ingredients. The company also features an (SC)² aggregate scale. The latter, together with a moisture meter, the water scale and its recorder and a cement scale comprise an (SC)² high-speed automatic concrete batching setup. The Scientific Concrete Service Corporation, 724 Salem Avenue, Elizabeth 3, N. J.



Designed for economical horizontal movement of materials, these three "Truck-Man" models are applicable to most industrial uses, for palletized, skidded or manually handled loads. Operator ridden, Truck-Man is now powered by the 4.4-hp. Wisconsin ABN air-cooled engine. The "Pallet Toter" and the "Skid Lift" models have hydraulic lift mechanisms. All three are built around the pneumatic-tired power turret for 360-degree turning. Load ratings are up to 3500 lbs. Truck-Man, Division of The Knickerbocker Co., Jackson, Mich.

● Cored Pallet Block Machine

The Praschak Machine Company, Marshfield, Wis., has just announced a new block machine, the "Automatic 400", which is operated by large slow-moving cams. The manufacturer stresses the fact that this new machine has been designed to eliminate all small fast-moving parts. The unit is capable of turning out 400 standard 8- by 8- by 16-in. units, per hour. Other sizes can be made in the same mold box by means of attachments or inserts.



Another good principle is the coordination of the powerful tamper packer-head used in conjunction with Praschak "centered vibration." This system insures a dense, hard, well-packed product.

The design of the mold box is such, that changing the molds is a simple operation. The box is of very heavy construction, to insure clean-cut units. The tops are squared and packed smoothly by a new strike-off and roller system, which recently was developed by the company.

The machine is very compact, requiring little floor space, and all working parts are easily accessible.

● Masonry Saw

Used in block plants to salvage damaged units and cut specials from regulars, and in cement plants to cut special kiln shapes—the Clipper Masonry Saw "Model HD" has proven a valuable asset to operations. A new specially-designed pump allows the operator to cut either dustless or dry merely by turning a pump valve. This patented pump need not be disconnected, as it runs during dry-cutting operations without harm.

The eight other 1950 Clipper masonry saw models for dry cutting have similar features (with exception of the wet-cutting feature) such as height adjustment notchees, "Adjust-a-Cut" control for materials of varying sizes, streamlined ball bearing conveyor cart, automatic blade pressure equalizer, foot pedal control, and snap-on blade guard cover. The wick, Kansas City, Mo.

Acrow Inc., 420 Lexington Avenue, New York City, manufacturers of the Acrow adjustable steel shore, column clamps, trench jacks, etc., have appointed distributors to handle the full line of Acrow Products in the South Central and Midwestern states.

Funkhouser Machinery Company, 2425 Jefferson Street, Kansas City, Mo., has been named to handle Acrow products in the western part of Missouri and the entire state of Kansas. Townsco Equipment Company, 1704 North West 6 Street, Oklahoma City, Okla., has been appointed distributor for Oklahoma. G. F. Smith Company, Inc., 5215 Manchester Avenue, St. Louis, Mo., will represent Acrow Inc. in the eastern part of Missouri and the southern part of Illinois.

In Colorado and Wyoming Lauren Burt, Inc., 3254 Walnut Street, Denver, Colo., is the newly-appointed Acrow distributor.

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Currier's MICALINED incinerators and barbecues

Write for details

Currier's Enterprises
4301 San Fernando Rd.
Glendale 4, California

TOUGH
LONG WEARING HEAVY COWHIDE
HAND PADS

Thumb-type Hand Pads, sewed with steel thread for extra wear. Open back, combines the fit of a mitten, with coolness of a hand pad. Uniform weight.

Designed especially for handling blocks, brick, tile and similar materials. These GS Hand Pads offer maximum wear at minimum cost. Workers like them.

No. GS 40
Chrome leather plain
$1.05 pair

No. GS 114
Chrome leather with palm patch
$1.45 pair

No. GS 119
Chrome leather with steel reinforced palm patch
$1.65 pair

ORDER TODAY DIRECT — OPEN ACCOUNTS INVITED

GENERAL SCIENTIFIC EQUIPMENT COMPANY
2735 W. Huntingdon Street — Philadelphia 32, Pa.

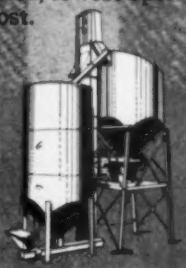
BIG PROFITS WILL COME BY BEIN' THRIFTY
IN ANNO DOMINI NINETEEN-FIFTY —

BUTLER Thrift-Equipment for 1950 PROFITS!

Central Mixing Plants
Engineered for peak production, lowest operating cost.

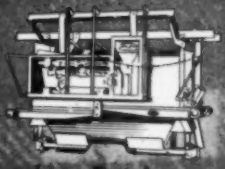
Ready Mixed Plants
From small units to the world's most automatic.

Aggregate Plants
For the busy roadbuilder who is always on the move.



Bulk Cement Plants
Tops in portability coupled with high speed batching.

Concrete Block Plants
Butler engineers have a remarkable "know-how" in planning the most efficient production.



Weighing Batchers
Many smart features make Butler Batching equipment the wise and economical choice.

Butler Carscoop
Agile, dextrous and quick, it's the world's fastest boxcar unloader.

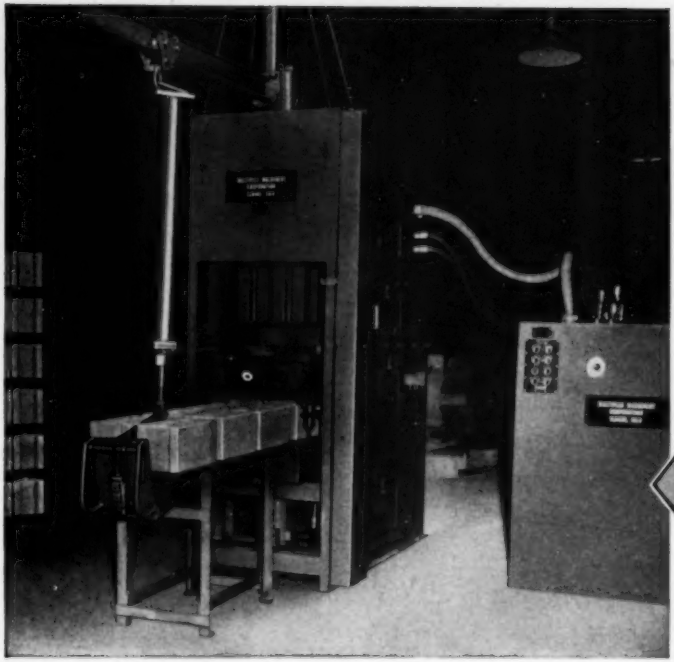
Butler Bin Gates
Next time replace with long-lived gates of Butler design. How about some now as a "reserve" against emergency?

MON! IT'S THR-R-RIFTY TO SEE THE BUTLER ENGINEER!

BUTLER BIN COMPANY
WAUKESHA, WISCONSIN

LEADING BLOCK MANUFACTURERS *prefer*

MULTICO AUTOMATIC



BLOCK MACHINES

COMPLETELY AUTOMATIC

HANDLES ALL AGGREGATES

PRESSURE VIBRATION PLUS TAMPING

SEPARATE POWER PAK CONTROL CABINET

MAKES ALL SIZES & SHAPES OF BLOCKS

Exclusive! — Only Multico gives you Vibration, tamping and pressure!

The Multico is industry's most versatile block machine. It makes all sizes and shapes of blocks, thus you can fill *all* orders—faster. Its practically a factory in itself. The Multico takes the aggregate and tamps on pressure while vibrating—all fully automatically, *all in one operation*—no other block machine can do this. Its exclusively MULTICO. Once the controls are set the MULTICO needs no operator excepting, of course, the offbearer. Thus you cut down on overhead, cut down on labor, and produce finer quality blocks faster.

Not a special machine, but a simple rugged powerful standard production machine, parts are always available. Then too the separate power pak can serve later models—another saving.

The Multico is made in two models one for 2 block per cycle and the larger unit for 3 block per cycle.

WRITE FOR FREE CATALOG

MULTICO
BLOCK MACHINES

MFGRS. of BLOCK MACHINES • MIXERS
SKIP HOISTS • STRIPPERS and ELEVATORS

"A BEAVER FOR WORK" MULTIPLEX MACHINERY CORP.

MULTIPLEX MACHINERY CORP. ELMORE OHIO

BESSER-ANZA
ROOF TILE
MACHINE

Fully Automatic

- **16 to 24 tile a minute**
- **Application of headcheck in manufacture**
- **Pallet Feeding and Loading of Pallets**
- **Oiling of Pallets**
- **Eccentric roller action knits concrete**
- **Coloring of tile in manufacture**
- **Feeding of Aggregate**
- **Permits use of aggregate of minus ¼ inch**

PERMANENT—
Besser-Anza Roof Tile are as permanent as the best concrete block walls.
WEATHERPROOF—
Headcheck and precision fitting baffles weather and storms.
FIREPROOF—
Permanently eliminates one of the greatest hazards in housing structures.
CHARACTER—
French, Spanish Mission or modern designs offer distinctive appeals.
BEAUTY—Charm and quality appearance come with color and sturdiness.
INSTALLATION—Precision fit eliminates sheathing and underfelt.
ECONOMY—Headcheck allows exposure of maximum tile surface.

Concrete Block Walls
and
Concrete Tile Roofs

Write Today for Literature

Besser-Anza roof tile is outstanding in Durability, Beauty, Fireproof, No Upkeep, Improves with Age, Stormproof. Roofs that will blend with any style of architecture for new or old buildings — the ultimate in protection.

Tile that are true and perfect in shape, uniform in size allowing unskilled labor to lay them and each tile covers a maximum surface.

You are invited to visit the Emerald Room at the Sherman Hotel, Chicago, Illinois, Feb. 6-9 during the N.C.M.A. Convention where Besser will show full color movies on the Besser-Anza Roofing Tile Machine.

BESSER MANUFACTURING COMPANY, ALPENA, MICHIGAN, U.S.A.

Concrete Manufacturer Used Equipment Section

Advertising rate per issue: $10.00 a column inch. 10% discount for 4 consecutive issues. (Lower rates on a contract basis.) New advertisements received by January 19th will appear in the February issue.

FOR SALE

Besser Vibrapac—makes 3-4, 2-6, 2-8, 1-10, 1-12, 8" header, air offbearer, Besser 25' mixer, 30' skip, in good cond. with many new parts, approx. 1700 steel pallets, 70 steel racks, air compressor, water meter, automatic transporter with new battery & parts, new — never used 45' steel enc. belt bucket elev., 45 yd. 2 comp. steel bin with vol. batcher, 1948 Erickson fork lift used very little, with motors, starters, switches, all for $20,000.00.

Besser semi-automatic 3½ per minute tamper with V belt drive and pallets $600.00.

25' Multiple mixer, motor & V belt drive, new liners, like new $1200.00. 35' open steel bucket elev. with new Pintle chain $300.00.

Int. K-8 with 10 motor 24' flat bed Highway Trailer with 10.00 tires all around, low mileage, first class shape $4000.00.

STRONG BLOCK CO.
La Crosse, Wisc.

FOR SALE

1—No. 9 JOLTCRETE—2 years old, in good condition. With mold boxes to manufacture 4, 6, and 8 inch blocks.
Approx. 3400—4 x 8 x 16 steel pallets.
Approx. 3600—6 x 8 x 16 steel pallets.
Approx. 4400—8 x 8 x 16 steel pallets.
1—Air Hoist—53 steel racks (72 blocks capacity).
1—Turn Table.
Will sell above separately or together.

Box No. R 11
c/o Pit and Quarry Publications
538 So. Clark St. Chicago 5, Ill.

FOR SALE

1 COMPLETE BLOCK MANUFACTURING PLANT in operation in fast growing community of Pasco, Washington, 10,000 population, located 15 miles from the Atomic development at Richland, Washington. The only factory in community. Partnership being dissolved reason for selling. Price $50,000, one half down, terms on balance. The above was built new in 1948.

TED BOLIN
120 So. Fourth Pasco, Wash.

UNBREAKABLE PALLET RINGS
Write for full information
TEXAS FOUNDRIES
LUFKIN, TEXAS

— FREE —

GRAVELEY (2-block-at-a-time) VIBRATING BLOCK MACHINE WITH MOTOR, OFF-BEARER AND ATTACHMENTS FREE if you buy the pallets, at 20 cts. each.

WM. M. CHASE (Dealer)
15 Linwood Avenue, Buffalo 2, New York

SPACE HEATERS

War Surplus Bargain

New — Ready To Use!

40,000 BTU capacity

—Burning gasoline, kerosene or diesel fuel.
—Electric blower—12 V. DC or 110 V. AC using small transformer.

Portable, Quick, Clean Heat

Ideal for curing room, concrete plants, work under construction, emergency heat, or auxiliary heaters.

$95.00 each

Clapp, Riley and Hall Co.
14 No. Clinton St.,
Chicago 7, Illinois

THREE SPECIALS

1. Best maintained all-power Model A Clipper Stripper block machine in the country, with motor and 8" and 4" mold boxes.
2. Model 7 Joltcrete complete with 8" mold box, pallets, power offbearer, racks and turntables.
3. Model 9 Joltcrete complete with 8" and 12" mold boxes, pallets, power offbearer, racks and turntables.

CENTRAL GOCORP
Del De Lamater Ted Merriam
403 Grace Street, Adrian, Michigan

FOR SALE

1—Dunn Korpac Block Machine equipped with hydraulic control
1700—8" pallets
1400—4" pallets
45—racks
12 cu. ft. mixer
12 cu. ft. skip loader
1—4" and 1—8" attachment
1—new Champion Tile Machine equipped with 5 HP motor and 4", 6", & 8" heads.

This equipment will all go for $4,000

CHARLOTTE BLOCK & SUPPLY COMPANY
Charlotte, Michigan

FOR SALE

Besser Super fully automatic tamper, 6½ molds per minute. Attachments for 4", 6", 8", 10", 12" block, 8" header block, 12" header block, standard brick, jumbo brick. About 3600 plain steel pallets, front end conveyor, and air off-bearing hoist. This machine is in first class condition. Available after Jan. 1, 1950.

THE THOMPSON COMPANY
0620 — 36th Ave. Kenosha, Wisc.

MINERAL COLORS
for
BRICK MORTAR
STUCCO-PLASTER-CONCRETE
"Fine Because of Their Fineness"
Ask for samples and recommendations.
BLUE RIDGE TALC CO., INC.
HENRY, VIRGINIA

COMPLETE CINDER BLOCK PLANT

From cinder handling through crushing, storing, manufacturing, curing and yard storage. Pneumatic tired fork lift; Bartlett & Snow 24" x 36" double roll crusher with spare parts, Joltcrete, Syntropac and Kirkham machines, pallets, attachments, racks, boiler and fittings—electrical equipment—all ready to assemble and produce—excellent condition.

CUMMINGS & STACK, INC.
1911 Kenilworth Avenue
Washington 19, D. C.
UN 9877

PACKER-HEAD WINGS

McCracken Type — PROVED to last as long or longer — yet cost considerably less. Write for prices.

TEXAS FOUNDRIES
LUFKIN, TEXAS

CEMENT COLORS

All shades and grades the highest quality.
Write for color cards, prices and samples
RICKETSON MINERAL COLOR WORKS
MILWAUKEE 2, WISCONSIN
Established 1885

FOR SALE

50—steel hinged block racks, 4 decks, 48 block cap., in good shape $15.00 each. Guaranteed.

WM. M. CHASE (Dealer)
15 Linwood Avenue, Buffalo 2, New York

LIFT TRUCKS FOR SALE
Will consider any reasonable offer
6000 lb. Towmotor Fork Lift—completely overhauled
6000 lb. Clark Platform Lift with extra parts
4000 lb. Salisbury Turreteer with extra power unit
WANTED
Concrete Roof Tile Machinery
CONE-CRETE PRODUCTS
1500 W. Bristol St. Elkhart, Ind.

FOR SALE

1 Stearns Model A Clipper with 8" attachment — Rock face attachment and racks.

BEN WAANDERS
ALLEGAN MICHIGAN

Advertise Your "Wants" and Surplus Equipment

Advertise Your

"Wants" and

Surplus Equipment

Here is the BIG PROFIT machine

THE MARVEL JR. — DRAIN TILE MACHINE

Included on the Marvel Jr. are numerous Pats. Pend. features of our Marvel Automatic. Now, no expensive, heavy, clumsy, in-the-way stationary machine is required.

MARVEL JR. is fast. Possible for one man to make four 4-inch perfectly formed, high-test drain tile in 60 seconds! Operates with ½ H.P. motor, and anywhere that an extension cord will reach. Mounted on casters. Tile are off-beared directly onto the floor and machine pushed forward as necessary. Save steps! Speeds production.

Original equipment includes one mold band and 4-inch packer piston. Price, less motor equipment, $260.00.

Write or wire

CONCRETE MACHINERY COMPANY

P. O. Box 2248 — Hickory, North Carolina

CONCRETE MANUFACTURER USED EQUIPMENT SECTION

WANTED

BESSER SUPER VIBAPAC and BESSER 30 cubic foot mixer
Location, condition and price.

Box No. R 14
c/o Pit and Quarry Publications
538 So. Clark St., Chicago 5, Illinois

WANTED TO BUY

A Besser (Victory or Super) Vibropac Block machine, with accessories. Please state price and condition.

Box R 5 c/o Pit & Quarry Publications
538 S. Clark St. — Chicago, Ill.

WANTED

WANT COMPLETE BLOCK PLANT WITHOUT LAND AND BUILDINGS. WILL PAY CASH. EVERYTHING MUST BE IN FIRST CLASS SHAPE.

Box No. R 4, c/o Pit & Quarry Publications
538 So. Clark St., Chicago 5, Illinois

WANTED

600 used Multiplex Chimney Pallets for making size 16 x 16" Chimney Blocks with 10¾ inch round ventilated flues.

GOSHEN VERILITE COMPANY
512 N. Seventh Street
Goshen, Indiana

WANTED

Elevator Scale, Bulk Cement and Aggregate Bins for Complete Ready-Mix Concrete Plant. Reply Post Office Box 535, Port Huron, Michigan.

WANTED

1200 used pressed steel Commercial code "Pauper" pallets for making 7⅝ x 11-11/16 x 15⅝ inches 50% air space blocks.

GOSHEN VERILITE COMPANY
512 N. Seventh Street
Goshen, Indiana

WANTED TO BUY

Stearns No. 9 Joltcrete, must be in good condition, and price must be reasonable. Please write detailed information.

Box No. Q 5, c/o Pit & Quarry Publications
538 So. Clark St., Chicago 5, Illinois

WANTED

Two (2) used 4½ or 5 yd. mixers preferably Jaeger or Rex conventional type. Good working condition. Also, used tractor with blade comparable to T.D. 18. Send listings, condition of equipment and prices to:

DISTRICT SAND & GRAVEL COMPANY
P. O. Box 4671 — Anacostia, D. C.

WANTED

FLEMMING 180 or BESSER VICTORY PAC

Box No. R 9, c/o Pit & Quarry Publications
538 So. Clark Street — Chicago 5, Illinois

FLORIDA OPPORTUNITY

Ready mixed concrete and contracting business in the heart of the most prosperous and fastest growing part of Florida.

Complete plant in top condition, twelve months per year operation. Forty thousand square feet of land served by sidings from two railroads. For further information write

Box No. Q 3, c/o Pit & Quarry Publications
538 So. Clark Street — Chicago 5, Illinois

WANTED

1 No. 7 or No. 9 Joltcrete Block Machine. Late model, attachments for making 4", 8", & 12" blocks, pallets for same, 60 steel racks, 48 blocks to a rack.

1 Electric Lift Truck.

1 20 cu. ft. Mixer.

Box No. R 13, c/o Pit & Quarry Publications
538 So. Clark Street — Chicago 5, Illinois

CEMENT COLORS — PROMPT SHIPMENTS

Write for samples and prices of "LANSCO" CEMENT COLORS in bright shades of RED, YELLOW, GREEN, BLUE, BLACK, BROWN. Manufactured by

LANDERS-SEGAL COLOR CO.
76 Delevan Street, Brooklyn 31, N. Y.

FOR SALE

Progressive Ready-Mix Company in live community Western Oregon. Four 4-yard mixers recent models. Grossed $40,000 first 6 mos. 1949. Good reasons for selling.

Box No. Q 2, c/o Pit & Quarry Publications
538 So. Clark Street — Chicago 5, Illinois

SITUATION WANTED

ENGINEER, mechanic, sales manager advertising man, young, 21 years experience concrete products plants, three years in field using concrete products. Available for periods of three months or less. Prefer competitive situations involving both blocks and wet cast products. Replies strictly confidential. Top references. Write

Box No. Q 9, c/o Pit and Quarry Publications
538 So. Clark St., Chicago 5, Ill.

FOR SALE

Lith-I-Block Machine, 2100 steel plain pallets complete with compressor, steel racks, 8", 4", 12", Lintel and Chimney mold boxes. Capacity 3600 to 4000 units per shift. Price $9,000.00.

PUMICE PRODUCTS COMPANY
Boise, Idaho

— FOR SALE —

7—Mack Trucks, Model A-E, 4 cyl.; yr. 1928-31; $350.00 Each. Good running condition and good tires. Trucks were hauling 6 yds. concrete in agitators until August 1, '49.

1—Bucket, 2 cu. yd. Williams Material Handling Bucket; 6 months actual use—$1,000.00.

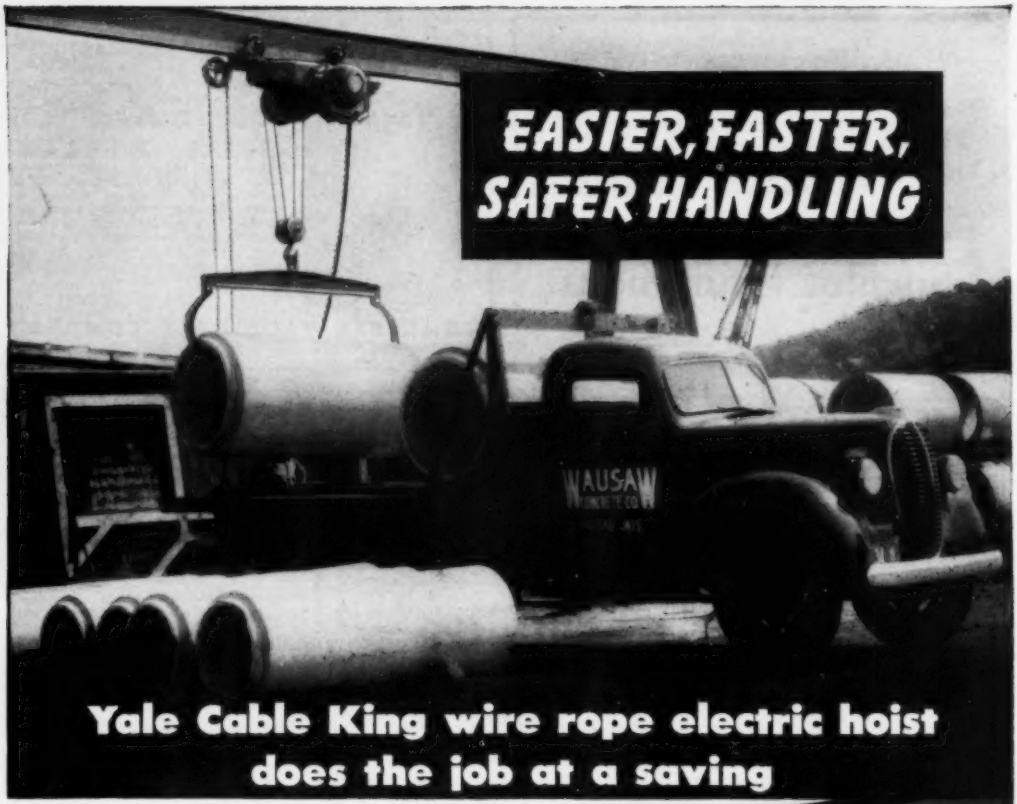
Subject to Inspection
Above all F.O.B. Indianapolis

READY MIXED CONCRETE CORPORATION
1100 Burdsal Parkway Blvd., Indianapolis 23, Ind.

FOR SALE

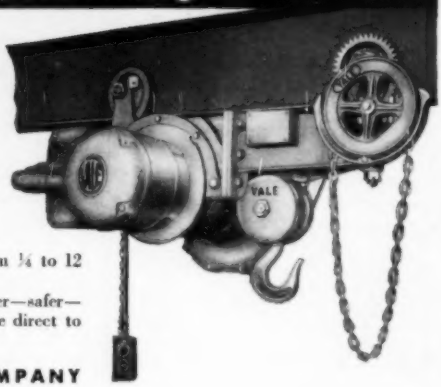
3—STEARNS MODEL A CLIPPERS with attachments
Like new — at a price — write

C. F. ROWELL
2762 Military Street — Port Huron, Michigan
or Phone 3023



Yale Cable King wire rope electric hoist does the job at a saving

Take the "muscle-work" out of handling massive concrete products. Save time, money and effort—use a Yale Cable King Wire Rope Electric Hoist. In this heavy-duty hoist, Yale combines exclusive air-cooling and positive load brake lubrication to eliminate excessive brake heat . to enable you to lift more tons per day . . . cut production costs. The Cable King load brake is self-actuating—operates automatically whether the power is "on" or "off." Complete safety for both operator and load! Fast make-and-break push-button control reduces the hoisting of great tonnage to a mere thumb-pressing operation—makes "inching" of loads a cinch.



There's a Yale Cable King for every need—lug, hook, plain trolley, geared trolley, motor driven trolley, or close headroom. Capacities from ¼ to 12 tons, for parallel or right angle suspension.

Learn how you can lower operating costs and handle materials faster—safer—easier. See your telephone book for the nearby Yale distributor, or write direct to headquarters.

THE YALE & TOWNE MANUFACTURING COMPANY
Department W-8
ROOSEVELT BOULEVARD **PHILADELPHIA 15, PA.**

YALE
TOOLS THAT KEEP INDUSTRY "ON THE MOVE"

INDUSTRIAL DIAL SCALES • HOISTS—HAND AND ELECTRIC • TRUCKS—HAND LIFT AND POWER

Cable Address: Macpipe

Successors to McCracken Machinery Co.

Concrete Pipe Machinery Co.

PACKER-HEAD CONCRETE PIPE MACHINES

EXPORT OFFICE
121 Broad Street, New York 4, N. Y. ◄ Reply to: ► Sioux City 19, Iowa, U. S. A.

— MAIN OFFICE —

McCracken Pipe Corrugated TRADE MARK

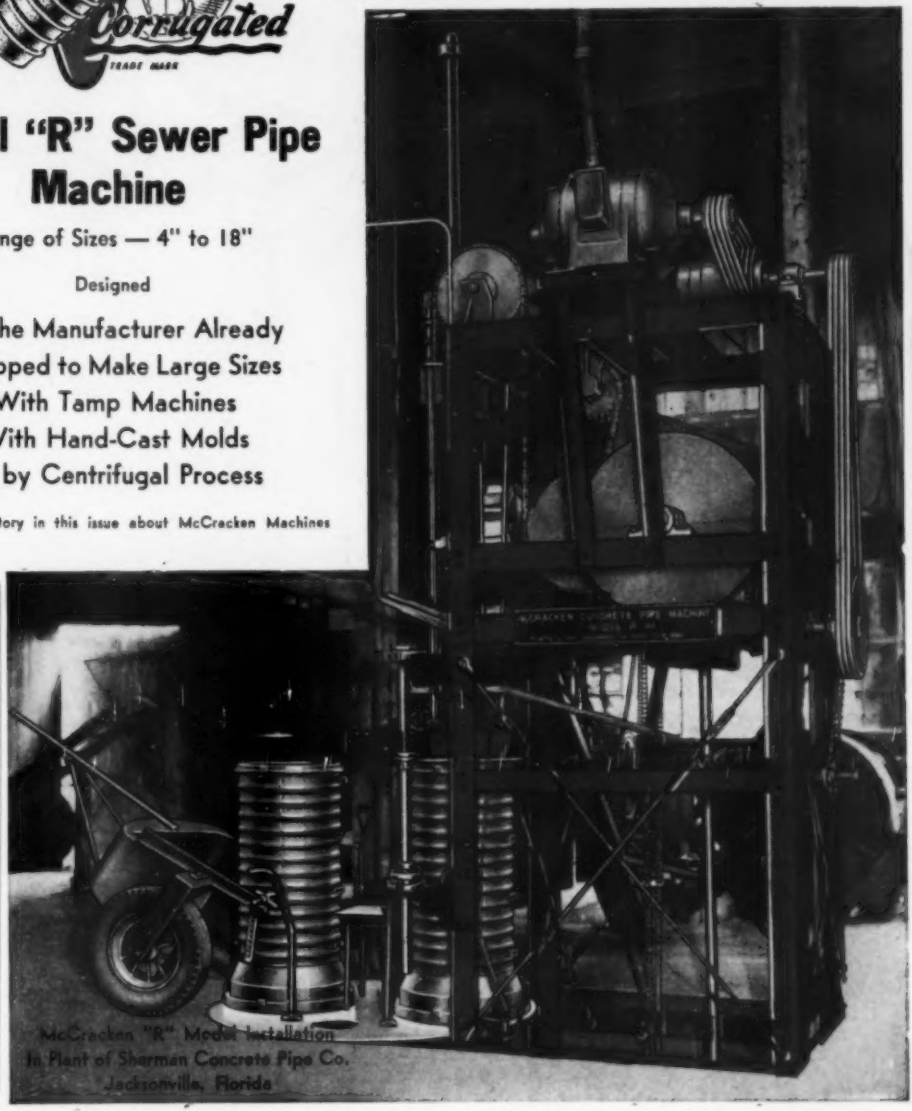
Model "R" Sewer Pipe Machine

Range of Sizes — 4" to 18"

Designed

For the Manufacturer Already
Equipped to Make Large Sizes
With Tamp Machines
With Hand-Cast Molds
or by Centrifugal Process

NOTE—See story in this issue about McCracken Machines



McCracken "R" Model Installation
In Plant of Sherman Concrete Pipe Co.
Jacksonville, Florida

Also Make Model "J" Sizes 4" to 36" Bell-Up Machine
Model "J" Makes Butt-End DRAIN TILE in 1 ft. or 2 ft. Lengths. Sizes 4" to 16".
Write for full details and prices on either Model "J" or Model "R" McCracken Machines.

Only the Packer-Head Process Makes 4" to 18" Pay Real Profits, Because:

1. It makes two pipe per minute.
2. 2,400 Feet Per Day.
3. "Strips" on Spigot-End. No Pallets.
4. Saves Buying 800 Pallets in Each Size.
5. Saves Extra Handling of Entire Output.
6. Saves Handling and Greasing Hundreds of Pallets Each Day.
7. Permits Double Shifts in Rush Periods Without Extra Equipment.
8. Extra Products and New Markets:
   A—Drain Tile.
   B—Underground Conduit for Electric Wires.
   C—Prestcrete Units for Pre-Stressed Concrete Floor and Roof Slabs.

Figure what a bag of cement *really* costs you !

There are hundreds of contractors and ready-mix operators who continue to handle bag cement because they have not figured its complete cost. They are not familiar with the line of Erie Portable Cement Handling Plants (172 bbl. to 600 bbl. capacity) and Semi Portable Bins of larger capacity that unload bulk cement from gondola cars. These plants can be knocked-down and moved to the job and give you that big advantage that fast, economical and accurate handling of bulk cement gives to larger operators. Let's have your problem and we'll show you how to pay for it out of savings over bag handling.

1. Estimate difference in first cost. Bag vs. Bulk. Jot it down . . . . . _____

2. Estimate cost of unloading Bags. $\frac{\text{No. of sacks}}{\text{Man hours}}$ x hourly rate = _____

3. Estimate cost of charging Truck Mixer. $\frac{\text{No. of sacks}}{\text{Man hours}}$ x (hourly rate of men + Mixer @ $6.00 /hr.) . . _____

   Your mixer time is worth say about $6.00 /hr. and the rent it takes to charge it with bag cement should be computed. Bulk Cement batching is fast and accurate.

4. Estimate cost of Loading Sheds—you won't need them with bulk handling. . . . . _____

5. You cannot figure how much you lose by guessing or splitting bags. Write in Total

and tomorrow . . . send for data and Catalog

ERIE

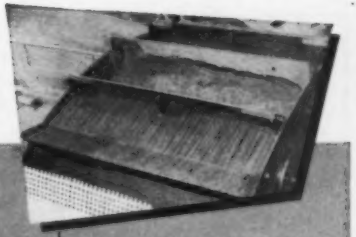
STEEL CONSTRUCTION COMPANY

601 GEIST ROAD • ERIE, PENNSYLVANIA

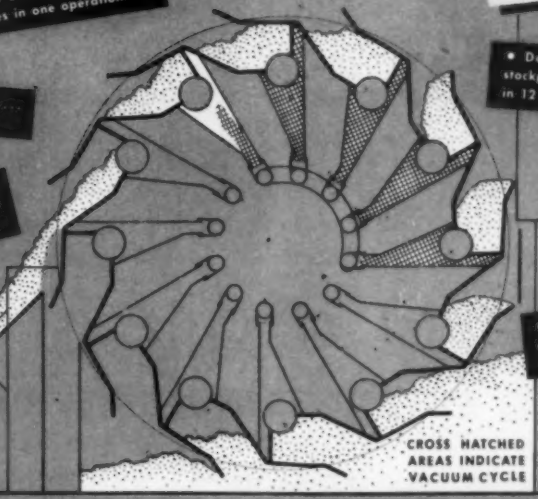
CONVEYCO

VACUUM SAND DEWATERING UNIT

Means Bigger Profits!



- Produces sand with at least 5% less moisture than any other method, in less time, and classifies in one operation.
- Saves desirable fines . . . eliminates silt.
- Saves money every day by reducing yard stockpiles and rehandling for shipment.
- Does in 1½ minutes what stockpile draining accomplishes in 12 to 48 hours.
- On the job tests prove it produces cleaner, better grade sand.
- Permits direct use of sand and batching without stockpiling.



A completely new and faster method for Dewatering and Classifying Sand!

HOW CONVEYCO DEWATERING UNIT WORKS

Conveyco now offers the greatest improvement in sand dewatering and classifying equipment in over 30 years. A patented process based on the principle of bottom draining and vacuum has been applied to a wheel. Vacuum drawn from the center of the wheel pulls water through round self-cleaning brushes at the back of the buckets. This self-cleaning filtering system retains desirable fines while producing 5% drier sand than by other commercial methods. The Conveyco unit occupies less space than previous types of equipment. Amazingly profitable for large or small sand and gravel plants.

ENGINEERS • MANUFACTURERS

THE CONVEYOR CO.

3260 EAST SLAUSON AVENUE

LOS ANGELES 11, CALIFORNIA

CONVEYCO

THE CONVEYOR CO.
3260 East Slauson Ave., Los Angeles, California

Gentlemen: Please send me booklet giving complete details on the Conveyco Sand Dewatering and Classifying machine.

Name_____ Title_____

Company_____ Address_____

City_____ State_____

Members and Guests of NCMA

WELCOME

to the

CHICAGO CONVENTION

We invite you also while in Chicago to visit the plant of The Oswalt Co. at 1335 Circle Ave., Forest Park, Illinois, where 900 blocks an hour originated. The research plant of Oswalt Engineering Service Corporation.

Harold Spaight's Cedar Rapids Block Company is the newest subscriber to Engineering Service.

OSWALT

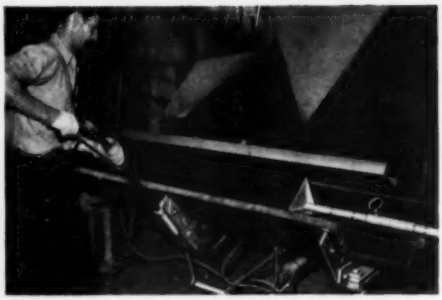
ENGINEERING SERVICE CORP.

1335 CIRCLE AVE. FOREST PARK, ILL.

Phone: Columbus 1-7073 — Forest 6-3898

SUCCESS DEMANDED A LARGER KENT LINTELATOR

— SO HERE IT IS —



FIVE SIZES NOW AVAILABLE

for Making 4", 6" and 8" LINTELS

No. 6 for LINTELS up to	6'	in length
No. 7 for LINTELS up to	7'4"	in length
No. 8 for LINTELS up to	8'8"	in length
No. 9 for LINTELS up to	9'4"	in length
No. 10 for LINTELS up to	10'8"	in length

(also for SILLS AND FENCE POSTS)

Success with Kent Lintelator machines, wherever used, has brought new buisenss to users with added profits they would not otherwise have enjoyed.

They began to ask for machines to make the largest sizes of lintels so we provided it in our new No. 9 machine, which is not only ideal for making 4", 6" and 8" lintels up to 10'8" in length—but SILLS AND FENCE POSTS ALSO.

Here is the means of getting additional *plus* business and *plus* profits.

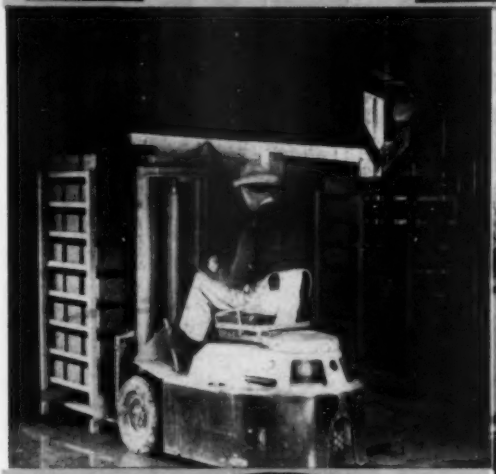
If it's profitable for others, it should be equally successful for you. Why don't you get *all the facts* if you haven't already done so, particularly in view of the fact that you will entail no obligation by doing so.

WRITE FOR ILLUSTRATED LITERATURE

The **KENT MACHINE CO.** Cuyahoga Falls, Ohio

Manufacturers of **CONCRETE PRODUCTS MACHINERY** *Since 1925*

INSIDE YOUR PLANT...OUTSIDE IN YOUR STORAGE YARD



with a Hyster® "20" LIFT TRUCK

REASONS WHY HYSTER "20" MOVES MORE MATERIALS...

- ✔ Pneumatic tires.
- ✔ Powerful air-cooled gasoline engine.
- ✔ Maximum operator visibility.
- ✔ Load-Grab — For handling many loads without pallets.
- ✔ Special Load-Grab arms available for handling bales, boxes, bundles, bags, barrels, oil drums — without pallets.

THE SAME TRUCK — the rugged, dependable "little" work horse, the HYSTER "20" — operates EQUALLY AS WELL *inside your plant* AS *outside in your* storage yard.

HEAVY DUTY INDUSTRIAL TYPE PNEUMATIC TIRES give the Hyster "20" greatly increased traction, ramp climbing ability, cut down on floor and paving repair and maintenance costs, make higher truck speeds more practical and safer, are easy on the load and driver — EITHER INDOORS or OUTDOORS.

HYSTER "20" HAS GREATER MANEUVERABILITY because of Hyster's patented turning counterweight around the trunnion mounted rear steer wheel; low center of gravity which increases stability; easier steering, rounded rear end.

THE MOVEMENT OF MORE MATERIALS in crowded areas — EITHER INDOORS OR OUTDOORS is done *quickly, efficiently* with the Hyster "20" (2,000-lb. capacity).

CURRENT DELIVERY . . . See your Hyster distributor. Write for literature.

Hyster's 7 models range from 2,000-lb. to 30,000-lb. capacity. All are equipped with pneumatic tires.

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Quality **CINDERS**

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CLEANED, SCREENED, CRUSHED

SIZING: HALF INCH DOWN TO POWDER — READY MIXED FOR YOUR MIXER — LOW IN COMBUSTIBLE CONTENTS — FREE OF STAINING CAUSES.

STEADY DEPENDABLE SUPPLY SHIPPED ON SCHEDULE

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TRUCK MIXER

Hi- DISCHARGE PRODUCTION SPEED PROFITS!

Lo- HEIGHT COST MAINTENANCE TIME LOSS

REVOLUTIONARY TRUCK MIXER DESIGN

CONCRETE TRANSPORT MIXER CO.

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HYDROZO COATINGS LAUGH AT WATER

Especially Designed For Interior or Exterior Masonry Surfaces

- HYDROZO CLEAR
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Since 1902 Hydrozo Coatings have been providing protection against moisture to buildings in every climate.

Write for information and prices.

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COLORS

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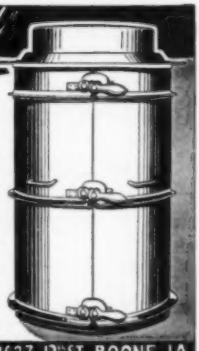
The ***Quinn Standard*** **FOR CONCRETE PIPE**



The Quinn Standard is known as the best the world over, wherever concrete pipe is produced and used. Backed by over 35 years' service in the hands of hundreds of Quinn-educated contractors, municipal departments and pipe manufacturers who know from experience that **Quinn pipe forms** and **Quinn mixing formulas** combine to produce the finest concrete pipe at lowest cost.

QUINN HEAVY DUTY PIPE FORMS

For making pipe by hand methods by either the wet or semi-dry processes. Built to give more years of service—sizes for pipe from 10" up to 120" and larger—tongue and groove or bell end pipe at lowest cost.

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How Does Calcium Chloride

Improve

COLD WEATHER CONCRETE?

Do you know exactly what happens to the strength of concrete when the temperature drops from 70° to 40° . . . or to 30°? Do you know the effect Calcium Chloride has on the setting time . . . early strength . . . ultimate strength, during the colder months? Do you know how much—

SOLVAY Calcium Chloride

√CUTS DELAYS

√SPEEDS STRENGTH

√ADDS EXTRA STRENGTH

The answer to these questions—and many others concerning cold weather concrete—are contained in Solvay's semi-technical book, "The Effects of Calcium Chloride on Portland Cement." This 40-page book clearly presents the facts on the use of Calcium Chloride. It is filled with graphs, tables, charts and contains much material not heretofore available. This information will be of great interest to contractors, architects, engineers, plant operators and men in allied fields. For your copy, write on your company letterhead to the address below . . . there is no obligation.

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ALLIED CHEMICAL & DYE CORPORATION
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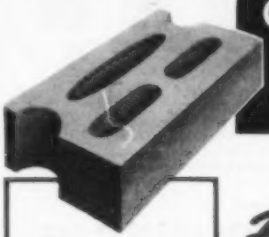
Have a Free Demonstration
...in *Your* plant
...using *Your* aggregate

Our fleet of Demonstrator Trucks makes scheduled demonstration trips.

GEORGE SERIES 400 CONCRETE BLOCK MACHINES



5 FEATURES of Redi-Furred Blocks

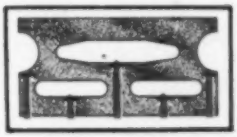
- Eliminates the need for furring and lathing.
- Insulates against heat and cold — 15.7% less heat loss.
- Prevents condensation.
- Lays faster and with a better bond.
- Simplifies electrical and plumbing installations by permitting wide interior channels.

make *Redi-Furred* and Conventional Blocks

We will gladly send one of our Demonstration Trucks to your plant, to prove the superiority of our series 400 Concrete Block Machines while operating under your conditions. You will see how the hydraulically operated PRESS-PAC head goes down into the mold box with 2400 pounds pressure while the mold box and cores are vibrating. Thus, the aggregate is firmly packed and dense throughout. Blocks of uniform strength with extremely water repellent walls result. You can watch one man turn out 7 to 10 blocks per minute.

CONDENSATION THWARTED

The red arrows give visual proof of how moisture and frost penetration is stopped by the staggered air spaces of Redi-Furred Blocks.

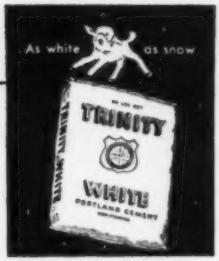


Write or wire for an appointment for one of our Demonstrator Trucks to visit your plant . . . also for descriptive literature and prices.

F. C. GEORGE MACHINE *Company*
100 S. WESTMORELAND DR., ORLANDO, FLA

Trinity White

the whitest white cement!



Trinity White is a true portland cement made from selected raw materials. It has all the excellent portland cement qualities of strength, endurance and workability. Use Trinity by itself for whiteness—with pigments for purer, truer color values. Use it in architectural concrete units, terrazzo, stucco. Trinity White Portland Cement — plain or waterproofed. Trinity Division, General Portland Cement Co., 111 W. Monroe St., Chicago; Republic Bank Bldg., Dallas; 816 W. 5th St., Los Angeles.

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PORTLAND CEMENT

1950 Columbia
Block Machine

Plain Pallet

Precision Blocks

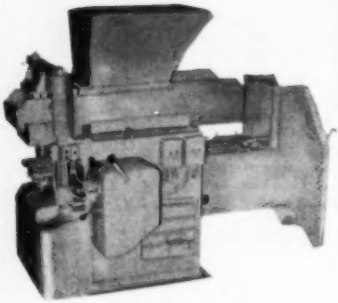
Maximum Production with Minimum of Labor

Low Investment

Three Sizes 4, 6, and 8 In. Blocks

Automatic or Semi-Automatic

Controlled Vibration with Syncronized Pressure



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Manufactured by

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105 Main. St. Vancouver, Washington

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RESEARCH DEPARTMENT

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- ☐ Bin Gates
- ☐ Bin Level Controls
- ☐ Bins and Batching Equipment
- ☐ Blades, Masonry Saw
- ☐ Block and Brick Machine
- ☐ Boilers
- ☐ Bucket Loaders
- ☐ Buckets, Concrete
- ☐ Buckets, Elevators
- ☐ Buggies, Concrete
- ☐ Bulk Cement Handling Equipment
- ☐ Bulk Cement Storage Plants
- ☐ Calcium Chloride
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- ☐ Colors, Cement and Mortar
- ☐ Conveyors, Belt
- ☐ Conveyors, Portable
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- ☐ Hoppers
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Because of the rapid growth of the industry in the past few years, and the important technological developments which have accompanied that growth, the Yearbook has been re-edited from front cover to back. Pages of new information, drawn from the experiences of the industry's outstanding producers, have been added to make this edition more than ever the indispensable text book of the concrete field.

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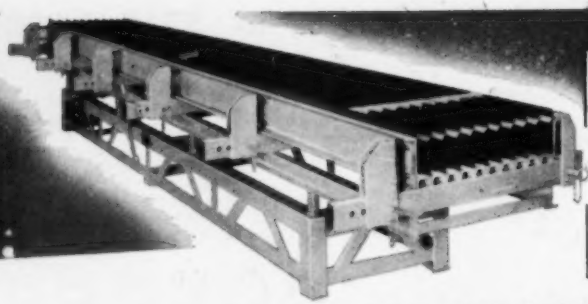

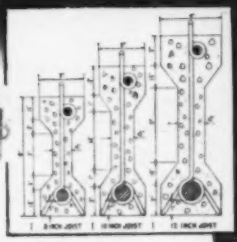

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Produce money-making concrete joists with the Kirk & Blum Heavy Duty Vibrating Table . . .

Only small investment required!

The addition of the Kirk & Blum Vibrating Table to your present equipment requires a very small initial cost, enables you to make an entirely new line of 8", 10" and 12" joists in 20 and 24 ft. lengths.

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Manufacturers of steel forms of all types . . . Curb, Gutter, Sewer, Road.

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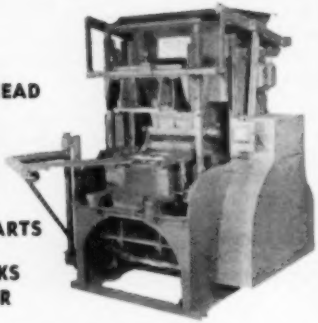

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NO SMALL WEARING PARTS

400 BLOCKS PER HOUR

SAVE 50% ON INITIAL INVESTMENT

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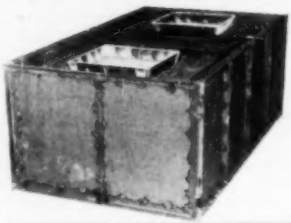

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POURED
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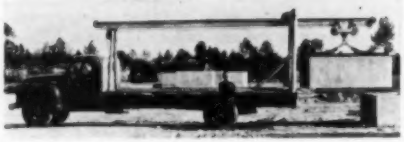

Loaded, transported and set in the hole by ONE MAN with the Carpenter Powered Delivery Rig.

Our Latest Machine

The Carpenter Block Bender

Made this block bend, or turn, used in sewer, drain and tile lines. A fine side liner for the concrete product manufacturer making septic tanks.

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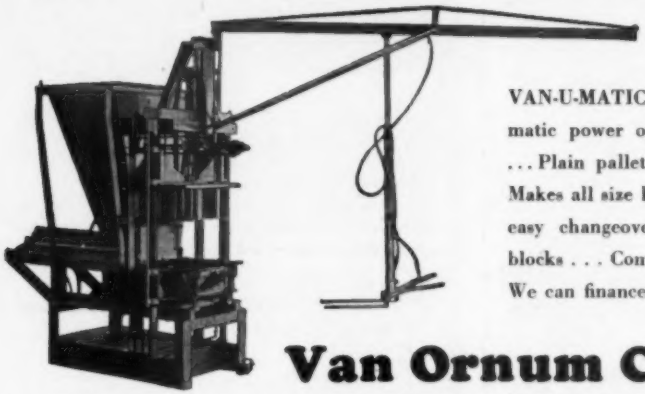

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VAN-U-MATIC has ALL the features . . . Pneumatic power operation, vibration and off-bearer . . . Plain pallets (⅓ usual pallet investment) . . . Makes all size blocks, 16" or 18" length . . . Quick, easy changeover . . . True dimensional, Perfect blocks . . . Compact, easy to install and clean . . . We can finance.

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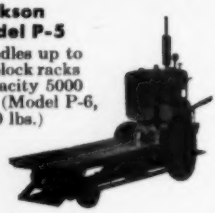
"GIVE YOUR BUSINESS A LIFT" with an *Erickson*

Every Truck "Custom-Built" for the Customer's Needs



Erickson Model P-5
Handles up to 90-block racks Capacity 5000 lbs. (Model P-6, 6000 lbs.)

Erickson "Custom-Built" F-5
with additional lift. Dual heavy duty tires for soft yards. Capacity 5000 lbs.

Erickson Model F-6
with standard wheels, forks and lift. Capacity 6000 lbs.

Erickson Model F-5
(Capacity 5000 lbs.) shown with detachable scoop. Fits any Erickson fork model.

We'll see you at the
N. C. M. A. CONVENTION
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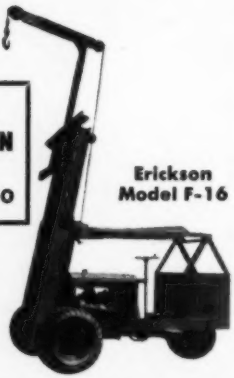

Erickson Model F-16
Capacity 16,000 lbs. Shown with boom attachment for your pipe work. Supplied with any style forks. Other pipe handling models with 6000 and 8000 lbs. capacity

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. . . because you can now buy a more durable, more efficient manufactured door that will actually *save you money!* It's the new light weight, all aluminum, "Uni-Temp" door—fully insulated and vapor sealed. It's faster to handle—saves fuel—saves repair costs—insures uniform curing—and the price is surprisingly low!

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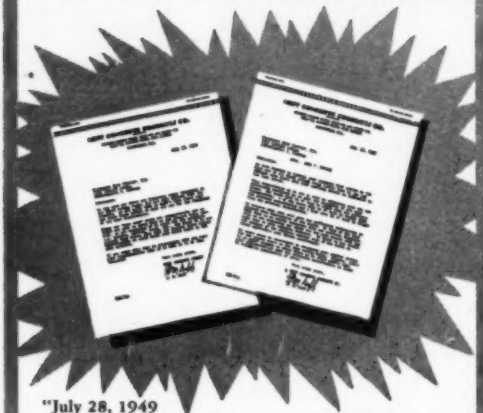

"July 28, 1949
"We now have our three new Universal doors installed . . . and are well pleased with the results; we are sorry that we didn't know about your new style doors before we made our own for the remainder of our door requirements.
"Since our 'home made' doors are comparatively new we would not want to scrap them at the present time . . ."

THEN . . .

"Aug. 16, 1949
"We have decided to install your complete door system on the East end of our block curing rooms rather than to use our present wood doors . . . we are enclosing our check for the same amount . . ."

Let us show you how you can increase operating efficiency, maintain a more uniformly high quality product—yet *actually save money*—by installing the new low cost, light weight, all aluminum, "Uni-Temp" door.

Write, wire, or phone (CApitol 8677):

SINCE 1904
UNIVERSAL DOOR CARRIER, INC
QUALITY DOORS and CARRIERS
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LOOK! JOE . . . I made this cut with my Clipper in 5 seconds!

SOLD DIRECT *from Factory to User*

PACKED WITH 1950 FEATURES

DUSTLESS CUTTING WITH MODEL HD

The outstanding Self-Contained Circulating Water System on the 1949 Model HD makes possible Completely DUSTLESS Cutting. Yes, completely DUSTLESS cutting for intricate jobs in confined areas. When dust is no problem merely turn the pump valve for dry cutting. No, you don't have to disconnect the pump on the Model HD Clipper to cut dry for it is to eliminate such time consuming adjustments.

BLADE PRESSURE EQUALIZER

That smooth, sensitive cutting action on every Clipper is a result of another exclusive Clipper feature, the Pressure Equalizer Spring with its Automatic Action.

ADJUST-A-CUT CONTROL

Clipper's exclusive "Adjust-A-Cut" Control—just pull the knob to instantly lower or raise the cutting head for materials of varying sizes. A "One-Man" operation!

SNAP-ON BLADE COVER

A Clipper feature that lets you cut wet—without getting wet! An outstanding safety feature for both wet and dry cutting operations.

Yes...

CLIPPER MASONRY SAWS
Make *Any* Cut Quickly and Easily!

Yes, you can slice through the hardest materials in seconds with the 1949 Clipper Masonry Saws. Smoother, faster cutting action than ever before. You'll find Clipper's the Genuine answer to any masonry cutting problem. Contractors agree on the New wet or dry cutting Model HD for the 100% Answer to ALL masonry problems. Actually the HD is Two Saws In One—it will meet your DUSTLESS cutting requirements in confined areas and will cut dry for outside operations. Every Clipper Masonry Saw is GUARANTEED, "To provide the Fastest Cut . . . at the Lowest Cost . . . with the Greatest Ease . . . Any Time . . . Any Where!"

Only Clipper Has NINE Models To Choose from!...

Not ONE Model—Not TWO Models . . .
But NINE separate and distinct Clipper Saws for you to choose from. Each completely different in price, in size, in performance. Select the Clipper Model that EXACTLY SUITS YOUR particular needs!

Clipper

DRY ABRASIVE BLADES
WET ABRASIVE BLADES
DIAMOND BLADES

Cut DRY—or cut WET . . .
Cut with ABRASIVE Blades—or with DIAMOND Blades . . .
In the more than 50 standard and special CLIPPER Blade specifications you will find THE EXACT SUPERIOR BLADE to cut YOUR materials AT THE EXACT SPEED YOU require!

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"SAVES MANY DOLLARS"
NATION-WIDE DIRECT FACTORY SERVICE

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Nine Clipper Models available on FREE TRIAL. Priced from $195... Shipped Direct from Coast to Coast Clipper Factory Branches.

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Glove costs cut 65%

Grab-it Coated Glove

Hap Out Double Palm Glove

CASE NO. 194

Workmen regularly wore out double-palm fabric gloves handling 3000 bricks, laid without mortar in kiln floor. Same men with Grab-it Gloves now handle 15,000 bricks, reducing glove cost from 9¢ per thousand bricks to 3.2¢. All tests showed close 5-to-1 wear ratio. Full details on request.

WORN 6 HOURS
by Bricklayer's Helper

You can make comparable savings. On all work that requires a firm grip, wet or dry, on sharp cutting or abrasive materials such as concrete block, clay products, sheet metal, lumber, glass or bags, ***Grab-it*** gloves of tough, flexible, rough-surfaced natural rubber, bonded to strong fabric, far outwear heavy canvas or costlier leather — just like a tire.

FREE TEST: Write today, stating your job condition, materials handled and temperature. We supply sample gloves and complete test details to employers, without cost.

MANAGEMENT:
It pays to promote better work gloves. Every dollar saved directly increases your profits — or the net income and good will of workers who buy their own.

Grab-it
FIRM GRIP—NO SLIP

Edmont Mfg. Co.
554 Orange St., Coshocton, Ohio

Beautify and Protect Porous Masonry with ONE COAT AGRASEAL

NEW, WATER-REPELLENT BRUSH COAT SEALS PORES OF CONCRETE AND BEAUTIFIES IN ONLY ONE COAT!

- **For exterior or interior use on cinder blocks, light-weight aggregate and concrete blocks.**
- **Better than two or more coats of ordinary cement coatings.**
- **Fills all voids. No hair checking. No alligator checking. No powdering.**
- **No expensive equipment needed. Apply with ordinary scrub brush or short bristle paint brush.**
- **Easy mixing. No lumps. Quickly soluble.**
- **Easy brushing. Spreads like butter. Cures fast.**
- **Comes in white and seven beautiful shades of ivory, light buff, grey, cream, green, sunny yellow, brick red. Easy to blend for pastel shades.**

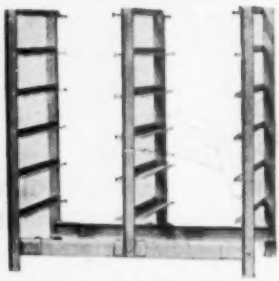
Write for details!

TAMMS INDUSTRIES, INC.
(formerly Tamms Silica Co.)
228 N. La Salle Street **Chicago 1, Ill.**

Corrosion-Resistant

CHASE BLOCK RACKS

at No Extra Cost



- *Lift truck racks*
- *Turntables*
- *Concrete block cars*
- *Transfer cars*
- *Dump cars*
- *Dryer cars*
- *Decks*
- *Clay cars*

We can furnish PALLETS for use with this rack.

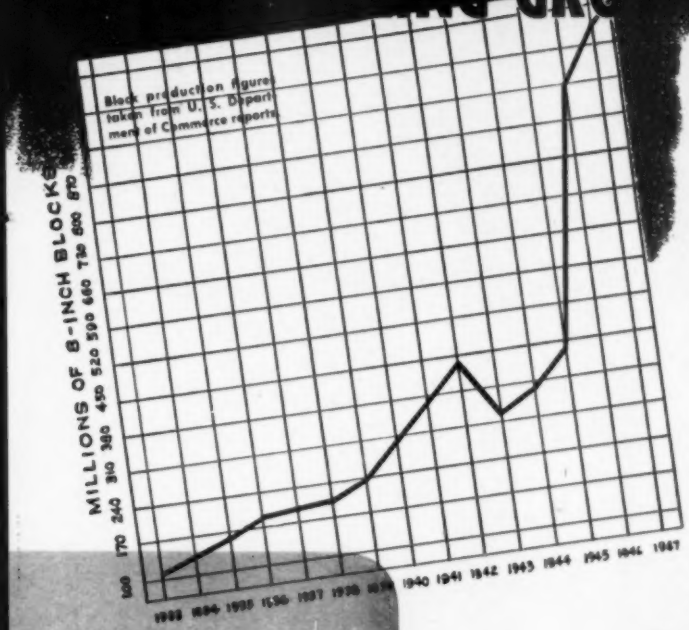
Write for catalog and price list on complete Chase line.

Model illustrated: 72-block capacity, handles 24 18½x26" pallets. For use with fork or platform lift truck; offers ample clearance for magnetic offbearer. Shipped knocked down for low freight cost. Easily assembled without special tools or welding. The Chase corrosion-resistant, high strength steel, rigid field connection and sturdy construction found in this model are available also in any style or capacity rack or car you need.

Chase Foundry & Mfg. Co.
Columbus 7, Ohio

Looking for Used Equipment?

Refer to the listings in this issue for a wide variety of used and surplus machinery and supplies.


MILLIONS OF 8-INCH BLOCKS
170 240 310 380 450 520 590 660 730 800 870
Block production figures taken from U. S. Department of Commerce reports
1940 1941 1942 1943 1944 1945 1946 1947

Concrete block production has increased from 27,000,000 units in 1933 to 1,042,000,000 units in 1947 . . . an amazing increase, unparalleled in the nation's history. From a small "back yard" occupation, the production of high-quality concrete masonry units has developed into a big, profitable industry.

During these years, the Besser Manufacturing Company has continued its leadership in the industry's progress. The company has devoted its constant and untiring efforts to the manufacture of concrete block machinery, pioneering new types of machines and improving production methods, thereby attaining higher standards for the industry.

Today — the product of your Besser Super Vibrapac Machine enables you to meet the ever-increasing demand for Masonry Units. Many of the nation's most outstanding homes, churches and schools, as well as hotels, public and commercial buildings, are convincing proof of the great VERSATILITY and BEAUTY of this modern building material.

BESSER MANUFACTURING CO.

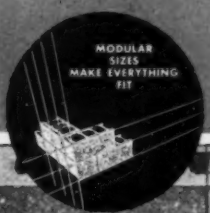
Complete Equipment for Concrete Products Plants

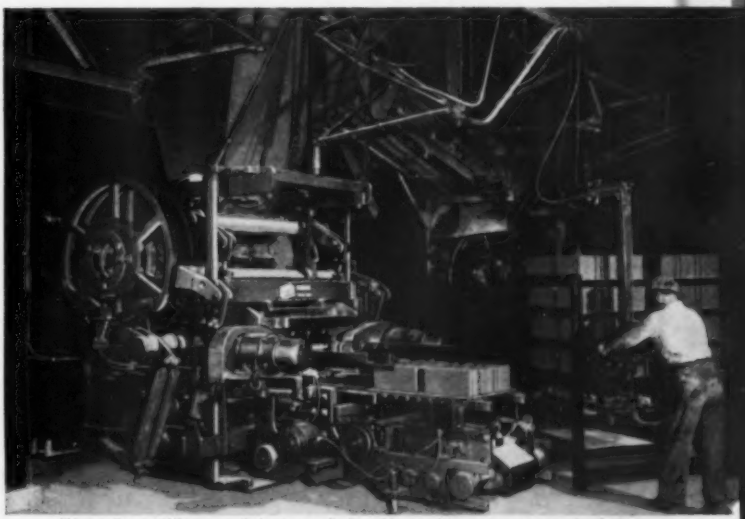
120 — 50TH STREET • ALPENA, MICHIGAN, U. S. A.

BESSER
SUPER VIBRAPAC

— the fully automatic concrete block machine. Produces three 7⅝" x 7⅝" x 15⅝" units at a time on one Plain Pallet. Smaller units made in larger multiples on the same pallets. Continuous, full capacity operation . . . fully automatic, including pallet feeding. Hand labor reduced to pushing a switch button and guiding a power off-bearing hoist.

If you want to install BETTER block machinery . . . look to BESSER!





Besser Super Vibrapac of the latest design. No machine operator required. One man off-bears full machine production with the help of a Besser Power Off-bearing Hoist.

BESSER

SUPER VIBRAPAC · BATCH MIXERS · SKIP-LOADERS · BLOCK CUBERS · AGLITE PLANTS · ACROW CENTERS · GENUINE PARTS

LOWER OPERATING COSTS!

MODEL "C" HYDRAULIC PIPE MACHINE

because of

Long lasting, wear-resisting wearing parts . . .

Less down time . . steadier production . . higher profits . . you're assured of all these by the long lasting wearing parts in Dixon Model "C" Hydraulic Pipe Machines.

All parts are of wear-resisting alloys, precision machined and ground, and can be changed quickly and easily. COMPLETE STOCKS ARE CARRIED FOR IMMEDIATE SHIPMENT OF ANY PART.

Write today for the full story on the Model "C" Machine. It's a profit-maker that costs less to own . . less to operate.

HOUSTON CONCRETE MACHINERY CO.

6600 WASHINGTON AVENUE HOUSTON, TEXAS

Manufacturers of:

Dixon Pipe Machines
Pipe Bend Machines
Dixon Mixers

Septic Tank Forms
Dixon Conveyors
Off-Bearing Carts

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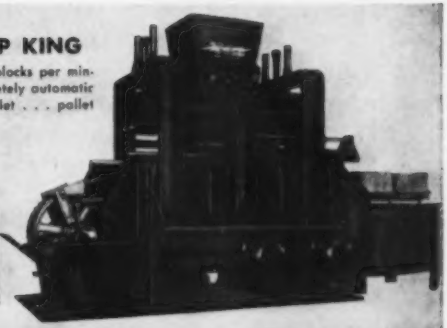
GOCORP SENIOR

12 eight-inch blocks per minute . . . same features as the King.

GOCORP KING

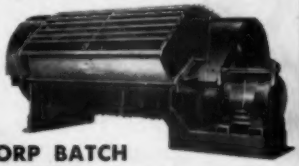
24 eight-inch blocks per minute . . . completely automatic . . . plain pallet . . . pallet return.



Patents allowed and pending

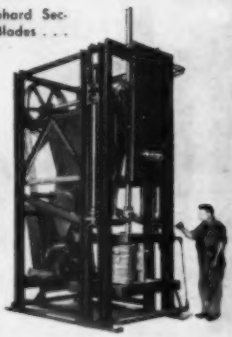
GOCORP JUNIOR

3 to 8 eight-inch blocks per minute . . . low price . . . cored pallet . . . vibrator machine.



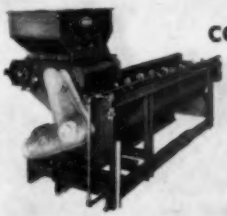
GOCORP BATCH MIXERS

Equipped with Gohard Sectional Liners and Blades . . . 5 standard sizes.



GOCORP PIPE & TILE MACHINES

Two sizes . . . 4" to 36" . . . heavy duty . . . high speed . . . hydraulic.



GOCORP CONTINUOUS MIXER

A continuous mixer which proportions accurately due to the material "densifier".

MODERN PROVEN ACCEPTED

THE MOST COMPLETE LINE OF CONCRETE PRODUCTS EQUIPMENT

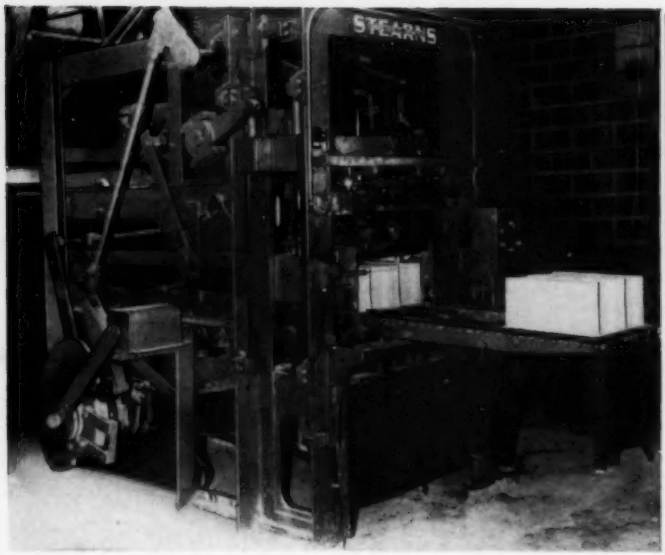
Completely New Machines

- Designed by men who pioneered the major improvements of the past.
- Built, sold and backed by men you have known for years.
- Production-tested in old established plants by practical, profit-minded operators who have purchased the machines.
- Have established new higher standards for controlled quality at lower cost.
- Basic new principles of design mark the beginning of another era, as did the development of vibration 13 years ago.

See us at the show

THE GENE OLSEN CORP.

401 GRACE ST. • ADRIAN, MICH. • PHONE 2120



NEW!

Stearns 50

2-AT-A-TIME CONCRETE BLOCK MACHINE

MORE PRODUCTION PER MACHINERY DOLLAR!

The enthusiasm of old timers for the new Stearns 50 Two-at-a-Time, Plain Pallet, Concrete Block Machine proves it to be another Stearns *first*. The best features ever used in famous Stearns machines are incorporated in the 50—plus many new developments based on exhaustive research and skilled engineering. *Stearns' Revolutionary Dual Shaft Uni-Directional Vibration*—rugged construction—every part readily accessible — anti-friction bearings — fully automatic split cycle operation—finest electrical equipment—positive height control—more production per machinery dollar. Here, old timers say, is the finest two-at-a-time concrete block machine ever to appear on the market! They know!

MODERNIZE WITH A STEARNS!

BACKED BY MORE THAN A QUARTER-CENTURY OF KNOW-HOW!

Descriptions, specifications, service manuals and prices on request. Stearns Consulting Engineers are always at your service.

STEARNS

MANUFACTURING COMPANY • INC

ADRIAN • MICHIGAN

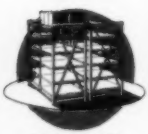
STEARNS 15

JOLTCRETES

CLIPPER STRIPPERS

MIXERS

SKIP LOADERS


TURNTABLES

SINTERLITE

IF your goal is..

GREATER OUTPUT AT LOWER COST

You need..

LIMA type 1201

3 or 3½ yd. capacity

TAKE A LOOK AT THESE *Features*

Precision Air-Control of all major operations.
Big, wide drums.
One-piece cast, annealed steel machine base.
Crawlers are extra long and wide, for greatest ground bearing area.
Splined shafts for permanent alignment.
Control permits hoist, swing, propel and boom up or down at the same time.
Rugged Diesel or electric power for big output in hard digging.
Big, roomy all-steel cab.
Independent chain crowd on shovel.
Anti-friction bearings throughout, including the drums.
Large, deep-throated point sheaves on crane or dragline boom.
—and many others.

● Quarry and pit operators faced with the problem of maintaining profits despite continually rising labor and other costs, will find a solution in the LIMA Type 1201 shovel, crane and dragline. Here is a machine capable of *peak production* day after day with greater efficiency, fewer delays and less operator fatigue. The shovel and dragline are especially designed and built for hard usage in pits and quarries.

A LIMA representative will gladly show you how a LIMA Type 1201 can cut costs on your mining operations. The LIMA line includes shovels ¼ to 6 yards, cranes to 110 tons, and draglines variable. Offices in principal cities of the world.

Lima Shovel and Crane Division

LIMA, OHIO

LIMA HAMILTON CORPORATION

OTHER DIVISIONS: *Lima Locomotive Works Division; Niles Tool Works Co.; Hooven, Owens, Rentschler Co.*

YOUR EQUIPMENT MUST EARN DIVIDENDS

Fuller equipment has always been designed and built with one idea in mind... to produce efficiently, and at the lowest operating cost. We feel that this has been proved, through the years, by the general overall acceptance of this company's products in the cement manufacturing industry.

On these pages we have illustrated, and briefly described, some of the major equipment manufactured by us; some old, some new, which the operating man in the industry employs for efficient, cost-reducing production.

OUTSTANDING CONTRIBUTIONS TO THE CEMENT INDUSTRY

Fuller-Kinyon Conveying Systems

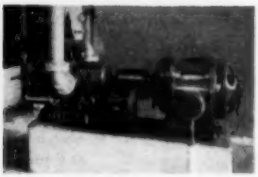
This system was accepted by the cement industry many years ago as the clean, safe, and efficient method for conveying pulverized coal, cement raw materials, and finished Portland cement. Today it is considered standard conveying practice in the industry, over 96 percent of the cement plants in the United States use this system, as well as many plants throughout the world.

F-H Airslide Conveyor

The latest, and, we feel, one of the outstanding contributions to efficiency and cost reduction, ever to be offered the cement industry. A revolutionary type of conveyor for transporting fine, dry materials, without the use of moving parts. By contrast with mechanical conveyors, it offers reduction in power to a fraction of previous costs; eliminates hazards to workmen; no lubrication; permits flexibility of plant design not available with straight-line conveyors; low maintenance cost.

Fuller Inclined-Grate Cooler

A three-purpose cooler—abrupt air quenching, heat recuperation, and final cooling. Ever since the first commercial installation was made, for cooling clinker, about 10 years ago, it has met with unusual success. It has been declared as one of the outstanding developments in the industry in recent years.



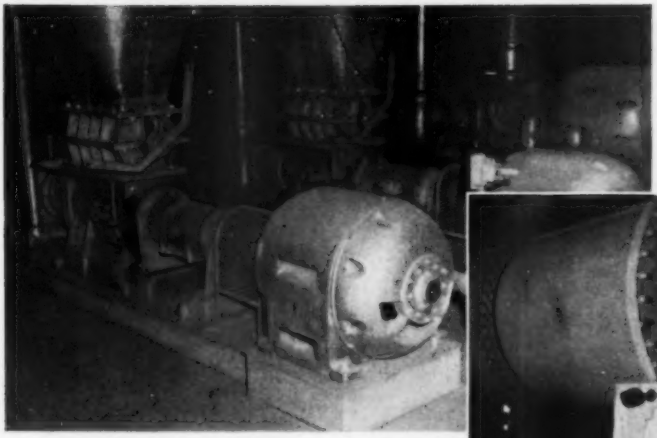
Fuller Rotary Compressor

Many cement plants have practically standardized on Fuller Rotaries, taking advantage of "spotting" compressors at the point of use . . . air, where needed, at the proper pressures to do the work required most economically and efficiently. This is especially advantageous with Fuller-Kinyon Systems, where air demands range from 15 to 45 pounds. Compressors used in this manner, can be shut down when the various departments have completed their daily cycle of operation. This means maximum overall savings in power and maintenance.

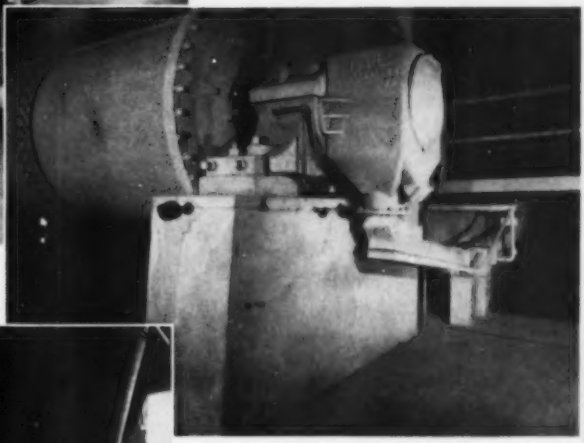
Fuller

EQUIPMENT FOR BETTER OPERATION

Fuller-Kinyon, Fuller-Fluxo, Airveyor, F-H Airslide Conveying Systems . . . Rotary Feeders and Valves . . . Rotary Compressors and Vacuum Pumps . . . Inclined-Grate Cooler . . . Pulverized Material Cooler . . . Material-Level Indicator . . . Aeration Units . . . Airlift . . . Constant-Head Feeder . . . Slurry Valves . . . Motion Safety Switch . . . Samplers



Left: Two Fuller-Kinyon Pumps for transporting finished Portland cement, a distance of 1100 feet, to storage silos. A Fuller Rotary Duplex Compressor, direct connected to the pumps, furnishes air for conveying, capacity 2100 c.f.m., 35-lb. pressure. One of the pumps serves as a standby.



Above: F-H Airslides collecting cement raw material from two tube mills; power requirements, approximately 1/8th horsepower. These Airslides replaced a screw conveyor, driven by a 5-hp. motor.

Above: Two Fuller Inclined-Grate Coolers installed for cooling cement clinker. Each cooler has a rated capacity of 5000 barrels of clinker every 24 hours. Clinker temperatures are reduced from approximately 2500-deg. fahr. to 150-degrees.

Right: Two Fuller Rotary Duplex Single-stage Compressors. Each has a capacity of 2040 c.f.m., at 40 lb. pressure. These compressors furnish air for a Fuller-Kinyon Conveying System for transporting cement from storage silos to an ocean-going cement-carrying vessel.

G 617

FULLER COMPANY
CATASAUQUA — PENNSYLVANIA
CHICAGO 3
120 So. LaSalle St.
SAN FRANCISCO 4
420 Chancery Bldg.

New *Homo-Flex* Heavy-Duty HOSE TEAM for WET DRILLING

Men who mine and quarry and excavate with wet drills have long demanded air and water hose that will withstand the scuffing and crushing of falling rock and rough working conditions. Manhattan engineers applied the Homo-Flex principle of hose construction to its hardest test . . and today you have your answer . . .

THE ROUGH, TOUGH TEAM OF *Condor* HOMO-FLEX HEAVY-DUTY AIR HOSE and HEAVY-DUTY WATER HOSE

Both of these rugged hose constructions feature extra thick cover protection that is literally "rubber armorplate". Every abusive blow rebounds from these new Homo-Flex constructions where lesser hose would be seriously gouged and injured.

Sharp bends over and around machines and rock are taken in stride by this tough team. Their sinewy hose walls stand up without kinking or collapsing. Thus, you can always be sure of a full feed of air and water to your wet drills.

Only Manhattan's exclusive principle of Homo-Flex construction makes possible this superior air and water hose team with their heavy-duty stamina to take this punishing service and still be flexible and easy to handle. In Homo-Flex, Manhattan engineers have developed a method of fusing tube, strength member and cover into one inseparable unit – for extra long life, extra margin of strength and safety, extra flexibility – extra value all around.

Don't overlook this opportunity to equip your wet drills with Condor Homo-Flex Heavy-Duty Air Hose and Heavy-Duty Water Hose—It's the team you asked for—developed specifically for your problems.

The Air Hose type with its oil-proof tube is also unmatched in performance in other heavy-duty mining, quarry, and construction operations.

Keep Ahead with Manhattan

MANHATTAN RUBBER DIVISION — PASSAIC, NEW JERSEY

RAYBESTOS-MANHATTAN, INC.

Manufacturers of Mechanical Rubber Products • Rubber Covered Equipment • Radiator Hose • Fan Belts • Brake Linings • Brake Blocks • Clutch Facings • Packings • Asbestos Textiles • Powdered Metal Products • Abrasive & Diamond Wheels • Bowling Balls

DEMPSTER DIGGSTER
Now Available With Two Types Of Traction

The revolutionary Dempster-Diggster, which is setting production records everywhere, is now available on crawler-type tractors as well as on the rubber-tired wheel type tractor. Both the rubber-tired and new crawler-type units feature the exclusive hydraulic crowd and hoist action that enables the Diggster to dig out the hardest chert bank . . . that permits digging 15 inches below and 15 feet above surface . . . that permits the bucket to follow the slope of the material in loading or stockpiling. Both units dig . . . load . . . bulldoze with equal efficiency.

If you're looking for a shovel that tackles big and small jobs alike with speed and economy of operation, your best bet is the Dempster-Diggster. It "spins on a dime" . . . loads and dumps faster . . . gets in those "hard-to-get-at" places . . . handles with a fingertip touch. For truck speeds on the road—to and from the job—it's the rubber-tired unit . . . for fast, efficient operation in difficult terrain, it's the new crawler-type unit. One of them is sure to fit your needs. Write today for complete information! A product of Dempster Brothers, Inc.

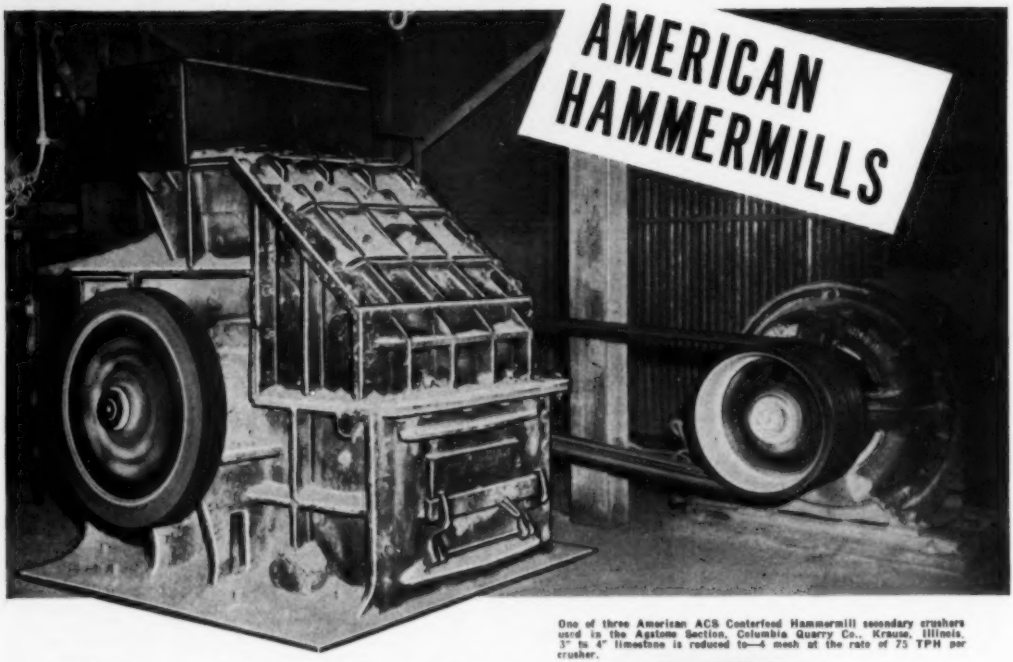
Photo above shows the new crawler-type Dempster-Diggster with 1 cu. yd. (heaped) digging bucket at its maximum hoisted position. Top photo at left shows the Dempster-Diggster rubber-tired unit digging out a 15 ft. bank of hard chert. Bottom photo at left shows the crawler-type unit ready to dump load into truck.

DEMPSTER DIGGSTER

DEMPSTER BROTHERS

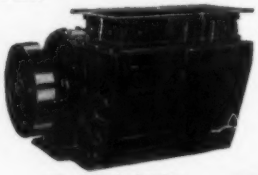
210 N. KNOX KNOXVILLE 17, TENN.

BETTER SIZE CONTROL . . . MEANS GREATER EFFICIENCY AND PROFIT with



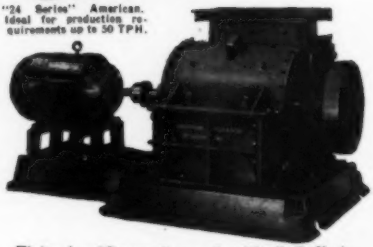
One of three American ACS Centerfeed Hammermill secondary crushers used in the Agstone Section, Columbia Quarry Co., Krause, Illinois. 3" to 4" limestone is reduced to—6 mesh at the rate of 75 TPH per crusher.

FLEXIBLE . . . to give a proper ratio of sizes to meet your stockpiling and current market demands. DEPENDABLE . . . for uniform, individual size control at high tonnage, year after year. One man size stone or screen rejects are rapidly reduced to uniform roadstone, aggregate or agstone sizes — with no fingerstones or slivers. From season to season . . . and from agstone to roadstone peaks . . . these operating advantages of American Hammermills add up to make every reduction operation more efficient and more profitable.



"30 Series" American. Capacities up to 100 TPH.

"24 Series" American. Ideal for production requirements up to 50 TPH.



Write for "Better Stone Crushing" Bulletin.

American PULVERIZER COMPANY

Originators and Manufacturers of Ring Crushers and Pulverizers

1059 Macklind Avenue
St. Louis 10, Mo.

LORAIN 50 SERIES .. The First Machine in the 1 Yard Class with Hydraulic-Coupling

NEW! 1-YD. CLASS
A fully convertible machine in the 1 yard class—shovel, crane, clamshell, dragline, hoe.

NEW! 2 SHOVEL BOOMS
All-welded 19 and 21 ft. lengths. Square—heavy duty dipper sticks.

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Air power steering and air control of tread lock from operator's cab.

NEW! 4 CRAWLERS
4 chain drive crawlers available — 11 to 14 ft. long; 9'8" to 13' wide. Driving mechanism, oil enclosed.

NEW! SHOE CLUTCHES
Wider, full-floating anchor type Shoe Clutches for swinging—faster response, longer life.

NEW! HYDRAULIC COUPLING
No engine stall; shocks can't reach machinery. Smooth, flexible, vibrationless power.

Yes, on the new Lorain-50 the hydraulic coupling (fluid clutch) power-take-off is standard equipment, at no extra cost! — In operation this means (1) the engine can't be stalled under any digging conditions; (2) digging impacts and stresses are absorbed before they reach the operating mechanism . . . And the Lorain-50 brings you many other NEW features, in addition to those shown . . . Your Thew-Lorain distributor has the complete story ready for you — today!

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It's the LORAIN 50 for 1950

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New "Weight-Saving" Diesel Tractors • New Middle-Weight Six-Wheelers
New Power and New Features in Light and Medium Duty Models

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For 1950 there's a new heavy duty 2½-ton "470" series . . . two new "400" and "620" series six-wheelers . . . two new "weight-saving" Diesel-powered tractors built to handle maximum legal payloads in the 45,000-55,000 pound weight range . . . a new 1½-ton "280" series of 11,000 pounds GVW.

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Construction contractors, oil field operators and movers of earth and rock will find a model ideally suited to their hauling needs in the GMC line which ranges from 4,600 pounds GVW to more than 90,000 pounds GCW. The two new six-wheelers, for example, with 24,000 and 32,000 pound GVW ratings are particularly well adapted to construction, oil field and quarry transport jobs.

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TRUCKS

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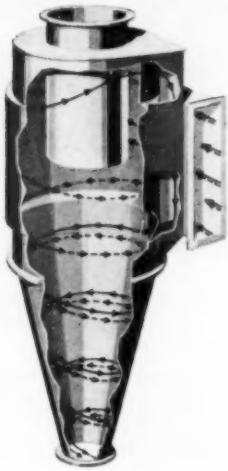
There's expert advice to be sought before tackling

Dust RECOVERY



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a foolproof formula that can be applied to all conditions. Each job requires individual engineering analysis... *by specialists.* Buell renders such a service, with no obligation to you. If a Buell Cyclone System can logically be recommended, it will be a tailored-to-the-job installation, of pre-measured and stated % efficiency. A Buell System naturally excells any ordinary cyclone, since it has the exclusive van Tongeren patented 'Shave-Off'. We invite your general or specific inquiry, and an opportunity to put service ahead of salesmanship. As a starter, let us send you the 32-page book, 'Engineered Efficiency'. Write: Buell Engineering Company, 70 Pine Street, Suite 5055, New York 5, N. Y.

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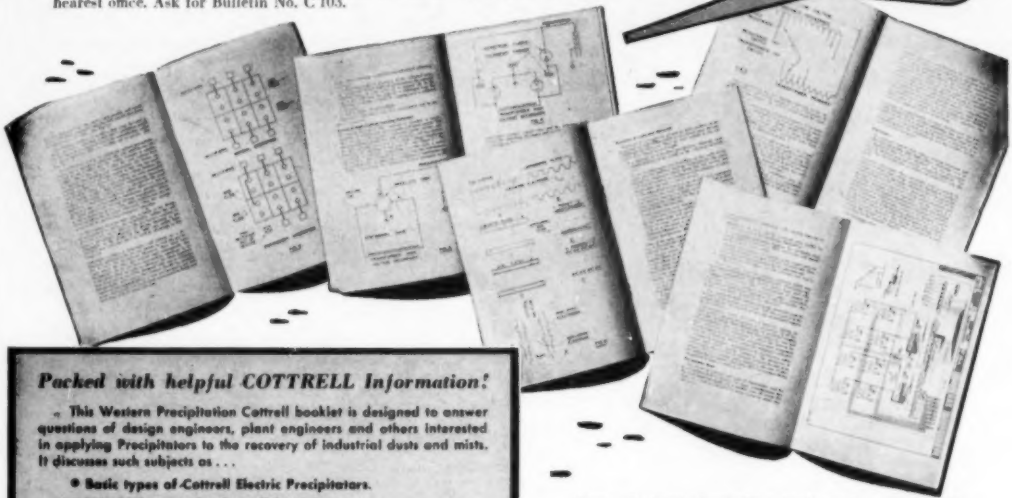
28 PAGES of helpful facts to know about COTTRELL ELECTRICAL PRECIPITATORS

IF YOU ARE ENGAGED in any phase of industry where the recovery of dusts, fumes, fly ash, mists, fogs or other suspensions from gases is a problem, you will find this booklet on the COTTRELL Electrical Precipitator helpful and informative.

Western Precipitation pioneered and installed the first commercial application of the well-known COTTRELL Electric Precipitator—Dr. Cottrell, the inventor, being a member of the company. And for more than 42 years Western Precipitation has consistently led in developing new COTTRELL advancements and techniques for recovering suspensions from gases, both wet and dry.

This 28 page booklet summarizes many of the basic facts you should know about modern COTTRELL Precipitators—the various types available, how they operate, principal types of electrode systems and rectifiers, shell constructions, etc. As long as the supply lasts, a free copy will be sent you on request to our nearest office. Ask for Bulletin No. C 103.



Packed with helpful COTTRELL Information!

This Western Precipitation Cottrell booklet is designed to answer questions of design engineers, plant engineers and others interested in applying Precipitators to the recovery of industrial dusts and mists. It discusses such subjects as...

- **Basic types of Cottrell Electric Precipitators.**
- **Principal parts of a Cottrell Precipitator.**
- **Mechanical and Electronic Rectifiers.**
- **Various types of Collecting Electrodes (rod curtains, corrugated plates, dual plates, pocket electrodes, etc.).**
- **Removal of Collected Material.**
- **Factors in Shell Construction (steel, concrete, brick, etc.).**
- **Operating Efficiencies and the Effect of Various Factors on Performance.**

...and many other basic Cottrell facts. Write for your free copy of Bulletin C103 today while supplies are adequate!

Western Precipitation is not affiliated with any other company in the field of electrical precipitation except its wholly owned subsidiaries, International Precipitation Corporation and the Precipitation Company of Canada, Ltd. Whether you are now contemplating the installation of a Cottrell Electrical Precipitator, or may be interested in such an installation at a future date, we can and will serve you in any part of the United States or other countries.

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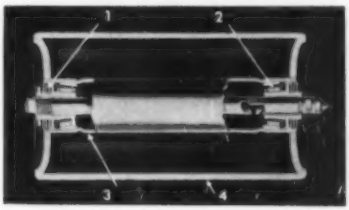

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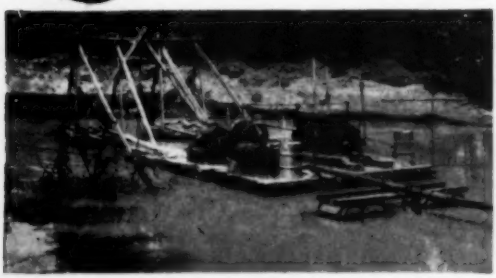

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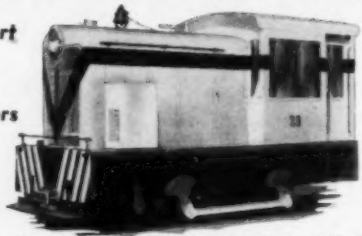

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Six Important Conventions Are Just Ahead

Industries Covered Are:

Agricultural Limestone

Sand and Gravel

Ready Mixed Concrete

Crushed Stone

Concrete Masonry

THE winter convention season is just ahead for many of the important nonmetallic mineral industries and related industries. Important national meetings are scheduled for producers of agricultural limestone, sand and gravel, ready mixed concrete, crushed stone and concrete masonry. In conjunction with several of these meetings biennial exhibits of machinery and supplies will be held. There will be more exhibits than ever before, giving the producer an exceptional opportunity to examine and compare equipment in which he is interested.

Complete programs of all these conventions are not yet available but the information on hand indicates that they are up to their usual high standards. Recognized authorities, most of them members of or directly connected with these industries, will discuss the latest and most important developments affecting these industries. Subjects covered will include production methods, merchandising, research, governmental developments, present conditions and future prospects, etc. Open forums will invite wide participation in the formal discussion of vital problems.

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IF NOT, DO SO *NOW!*

Here are the Dates and Places

Fifth Annual Convention
of the
National Agricultural Limestone Assn.
January 18, 19, 1950
Statler Hotel, Washington, D. C.

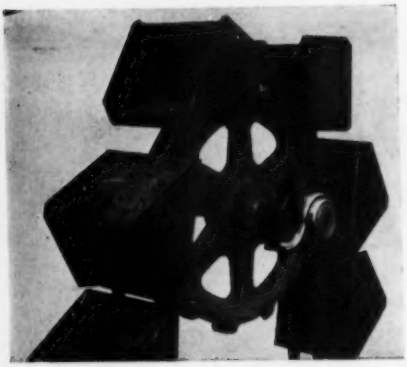
Thirty-Fourth Annual Convention
and Machinery Exposition
of the
National Sand and Gravel Assn.
January 23-27, 1950
Stevens Hotel, Chicago, Ill.

Twentieth Annual Convention
and Machinery Exposition
of the
National Ready Mixed Concrete Assn.
January 23-27, 1950
Stevens Hotel, Chicago, Ill.

Thirty-Third Annual Convention
and Machinery Exposition
of the
National Crushed Stone Assn.
January 30—February 1, 1950
Stevens Hotel, Chicago, Ill.

Fifth Annual Convention
and Machinery Exposition
of the
Agricultural Limestone Institute
February 1-3, 1950
Stevens Hotel, Chicago, Ill.

Thirtieth Annual Convention
of the
National Concrete Masonry Assn.
February 6-9, 1950
Hotel Sherman, Chicago, Ill.



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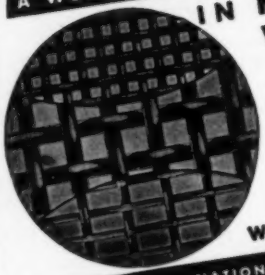

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- ☐ Batching Equipment
- ☐ Belt Dressing
- ☐ Belt Fasteners
- ☐ Belting, Conveyor and Elevator
- ☐ Belting, Transmission
- ☐ Belt Tighteners
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- ☐ Bins
- ☐ Blasting Powder
- ☐ Blocks, Friction
- ☐ Bodies, Motor Truck
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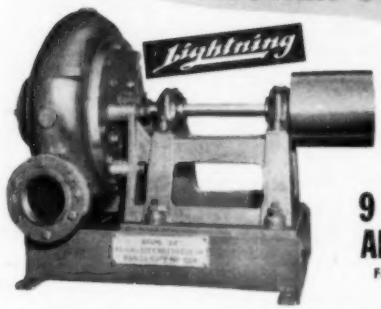

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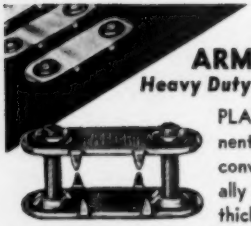

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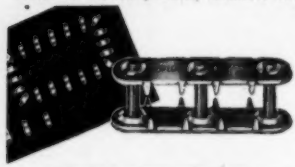
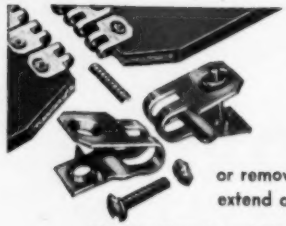
Heavy Duty Conveyor Belt Fasteners

PLATEGRIP Belt Plates permanently join the ends of heavy conveyor belts. Applied manually anywhere to belts up to 1¼" thickness, and of any width, they make a smooth, flush, flexible and dust-tight joint.



PLATEGRIP Repair Plates make it possible to repair rips or insert patches in worn belts.



Hinged Plategrip Fasteners No. 500 make a strong flexible joint that can be parted by pulling out hinge pin—permit easy adding-on or removal of belt sections (as to extend or shorten belt).

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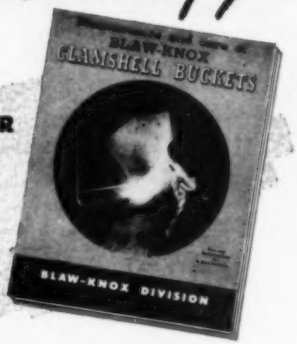

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(ABOVE) *Root pickers in Michigan quarry remove marked manganese dipper-tooth from conveyor line.*
(BELOW) *The two Eriez Metal Detectors installed here paid for themselves in first month of operation.*

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42"	5	1/8" — 1/16"	20"	5	1/8" — 1/32"
36"	6	1/8" — 1/16"	20"	4	1/8" — 1/32"
30"	6	1/8" — 1/16"	18"	4	1/8" — 1/32"
30"	5	1/8" — 1/16"	16"	4	1/8" — 1/32"
26"	5	1/8" — 1/32"	14"	4	1/16" — 1/32"
24"	5	1/8" — 1/32"	12"	4	1/16" — 1/32"

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	12"	6	8"	5	4"	4
	12"	5	6"	6	3"	4

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2"	50 "	23.00
	25 "	13.00
1½"	50 "	20.00
	25 "	11.00

Specify Thread On Couplings

AIR HOSE

I.D. Size	Length	per Length	Universal Couplings
½"	25 feet	$5.00	$1.50 Pair
	50 "	10.00	1.50 Pair
¾"	25 "	7.50	1.50 Pair
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1"	25 "	10.00	1.50 Pair
	50 "	20.00	1.50 Pair

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I.D. Size	Length	per Length	I.D. Size	Length	per Length
¾"	25 feet	$4.25		35 feet	$10.50
	50 "	8.00		40 "	12.00
1"	25 "	6.25		50 "	17.00
	50 "	12.50	1½"	25 "	10.00
1¼"	25 "	7.50		35 "	14.00
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Each Length with Couplings Attached

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1—#6 McCully crusher in good running condition just taken from service.

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A number of new manganese steel screen sections for Allis Chalmers 6' revolving screens 2¼" perforations.

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CONVEYORS - FEEDERS
SCALES - CRUSHERS
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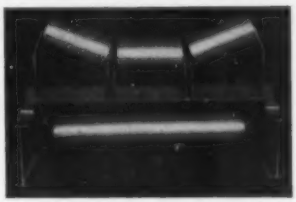

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RELIANCE Roller Bearing Washing Screens with special scrubbing sections insure thorough breaking up of the material.

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FOR fast economical production, use the high-efficiency washing and screening methods, now available in Reliance Machinery. Dynamic improvements in the past five years have made Reliance the standard equipment in modern installations everywhere. If you require a single machine, a combination of units or a complete plant, you can depend on Reliance experience for best results.

RELIANCE Paddle Type Wash Box with long gradual incline gives a clean, dewatered product that can be loaded or stored without segregation.

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16.4 Cu. Yd. Hydraulic Semi-Trailer as used by Columbia Quarry Company

CUT HAULAGE COSTS

Specialized Equipment

By

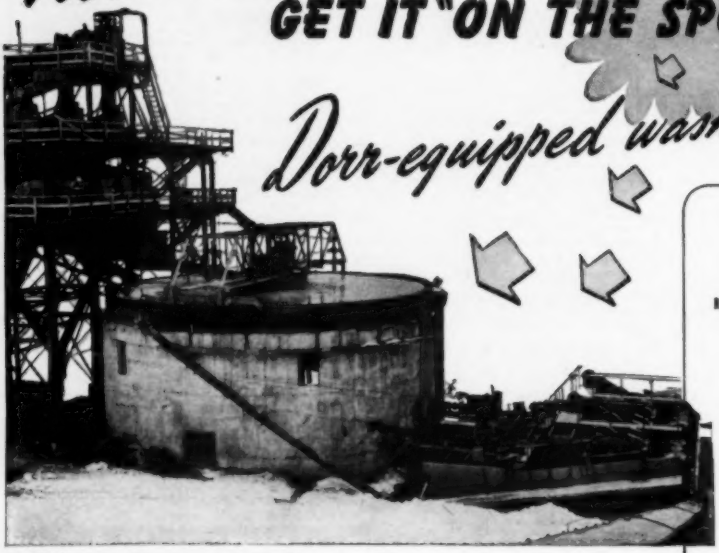
LANDIS STEEL CO.

Box 248 Picher, Okla.

Need concrete sand...

GET IT "ON THE SPOT" WITH A

Dorr-equipped washing plant



CONCRETE SAND for dam construction . . . or any heavy construction project . . . can be produced at the working site with a Dorr-equipped washing plant. Here are three typical examples . . . with capacities ranging from 50 to 500 tons per hour.

FLOWSHEET #1—50 to 60 tons per hour

Simplicity itself—rod mill reduces the raw material . . . Dorr Classifier washes and separates finished sand from silt and water.

FLOWSHEET #2—50 to 150 tons per hour

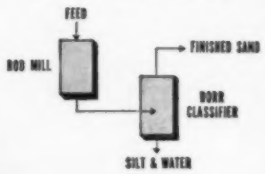
Rod mill reduces raw material . . . Dorr Bowl Classifier washes and separates finished sand from larger volume of silt and water. Dorr Thickener may be added to settle out silt and recover water for reuse.

FLOWSHEET #3
150 to 500 tons per hour

Rod mill reduces raw material . . . Dorr Hydroseparator makes preliminary separation of sand and silt . . . Dorr Classifier makes final separation, delivering finished sand as rake product. Dorr Thickener recovers water for reuse from Classifier and Hydroseparator overflows.

A Dorr-equipped plant can produce any tonnage you need . . . can meet your specification for special sands at reasonable cost. A Dorr engineer will gladly discuss your requirements with you in terms of equipment and economics . . . at your request.

FLOWSHEET No. 1



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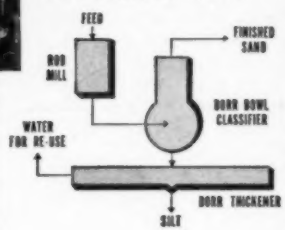

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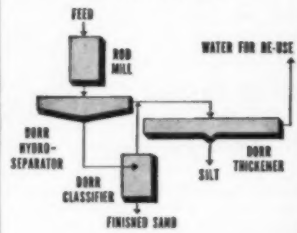

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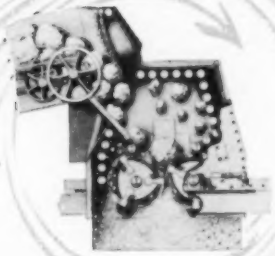
Get 8″ or 1/8″ minus

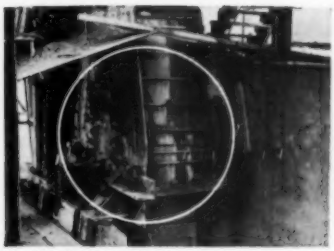
. . . with *Dual Impact Action*

See how impellers in schematic drawing, rotating at speeds up to 1000 rpm, smash stone in *mid-air*. Three-way size-control assures production of sizes desired.

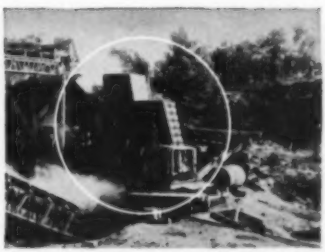
Only New Holland has it . . .



In Ohio Bank Run Aggregate . . . "Capacity is twice that of two crushers replaced" . . . writes Robert Coe of Basic Construction Materials, about Model 2020 New Holland Breaker. Takes all rock passing 20″ opening; yields clean, cubical aggregate minus 1″ in one pass.



In Florida Coral Rock . . . G. D. Monroe, president, Miami Crushed Stone, reports, "a considerable saving on maintenance and power costs." Here, New Holland Breaker Model 3030 replaced 3 old-fashioned crushers, producing 80 tons per hour in closed circuit system.



In Georgia Limestone . . . "The ability of this breaker (New Holland Model 5050) to reduce 50″ material to commercial size, passing minus 4″, in one pass is remarkable," says W. E. Lambert, of Lambert Brothers. Takes up to 400 tons per hour on 300 horsepower.

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Line-drilling for the foundation of the 19-story Crowell-Collier Building at 51st St. and Fifth Ave., N. Y. C., cut down 30 ft. through rock. Photos show part of the Worthington Blue Brute equipment used by the Slattery Co., for the extremely accurate drilling required on this location. (1) Two Blue Brute 500′ Portable Compressors deliver a steady supply of air through their easy-breathing Feather*Valves. (2) One of the UMW-40 Blue Brute Wagon Drills — fast, powerful drilling machines that swing into action at any angle. (3) Two of a battery of Blue Brute Hand-Held Rock Drills — hard slugging, precision balanced, easy handling WJ-55's.

*Reg. U. S. Pat. Off.

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